gigantibus, quorum umeris insidemus nani

Echoing Bernard of Chartres as reported by John of Salisbury

(*Metalogicon* III.4)

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Note on Musical Examples

Many of the examples showing passages written in neumatic notations include versions of the same melodies written on staves. These diastematic versions are taken from the *Graduale Triplex* or the *Graduale Novum*, whichever appeared more appropriate in each case. It is not intended that these versions on staves should be read as direct transcriptions onto lines of any of the neumatic notations they accompany here: they are provided as guides to melodic direction, to help orientation as the neumes are read. These stave versions also provide labels to allow discussion of the notation of particular passages (note names, **A–G, a–g**).

Preface

In the Latin West, books of music have been made at least since the eighth century. The earliest examples contain only texts, evidently intended to stimulate the reader into remembering associated melodies. The appearance of music notations in Carolingian books from the second quarter of the ninth century represents a moment of significant change: writing could now be used more intensively to support the process of remembering melody. In this study I have set out to examine the diverse ways in which scripts were used for the writing of musical sound in the period 800 to 900, that is, in that time when Carolingian monks, clerics, scholars and other members of an elite educated class were increasingly engaged in the production of books and profoundly interested in how those books should be made, how their content should be expressed and written, and what kind of visual images they should present to their readers. Surviving notations are used here as a means to observe how scribes understood the possibilities and potential of music scripts and how those scripts were altered and refined in this first period of use.

Writing as art and craft has been in my eyes all my life: whether in frames filled with exquisite calligraphic work and ink decoration, or in more mundane everyday uses, the fine writing of my maternal grandparents, Herbert Lilley and May Stuart – trained by Charles Braithwaite at the Belfast School of Art in the 1910s and 1920s – touched me from my earliest years. An ability to work carefully with their fingers (inherited from generations of weavers) has formed artists, calligraphers, musicians and surgeons in my family. As an undergraduate studying music, I had no idea that my growing fascination with medieval manuscripts – that interest and basis for knowledge that would become the central force in all of my scholarly study – had such deep roots. This influenced my methods so fundamentally that I wanted to consider musical notations and the manuscripts which encased them from the point of view of individual scribes rather than as the typical products of scriptoria; thus, the ways in which scribes thought about what they were doing as they formed traces on the page to record musical sound and their own distinctive or even idiosyncratic approaches to how they could make records should be my starting points.

It was in Michel Huglo's seminars at the École Pratique des Hautes Études in the late 1970s that I first saw music notations written in neumes, and at his behest I first wrote about neumatic notations in insular forms. Extensive work alongside Wulf Arlt and Leo Treitler in the 1980s developed my knowledge of and interest in the study of neumatic notations, above all in their earliest incarnations. Much time spent discussing 'Reading and Singing' as it was drafted gave Leo's most substantial study of early music writing a key place in my thought,

inspiring ideas and questions that have shaped this whole book. The stimulus for the subject of the present book, however, was more recent: an invitation to give the Lowe lectures in the University of Oxford in 2007 made me think much more precisely about the early history of music scripts and notations. Nothing in this field could be matched to Lowe's *Codices Latini Antiquiores*, all extant examples being on the wrong side of the year 800. Nevertheless, I reasoned, it ought to be possible to learn more about the invention and development of music writing, about what had happened before the famous Laon Gradual and Sankt Gallen cantatorium were made. By this time I had understood that the immense achievement of Bernhard Bischoff in providing a solid palaeographical framework for studies of ninth-century manuscripts, ways of writing, scriptoria and individual scribes could provide a new basis for study of the earliest manifestations of music writing in the Latin West. Ending the Lowe lectures in 2007 – wonderfully hosted by the president of Corpus Christi College, Oxford – I promised myself to write them up and publish within a year. A wiser head would have uttered 'know thyself'. In 2009 a semester as Edward T. Cone Fellow at the Institute for Advanced Study in Princeton provided valuable space for thinking. Living during that magical period within a quarter of a mile of Kenneth Levy, I could not only borrow his books and facsimiles but also constantly talk through ideas with him. 'Look at the Palaeofrankish' was his unflagging advice: 'I can't, because there are not enough examples written before 900 to work on' was my persistent response. I honour the memory of these two friends and mentors: Michel Huglo, whose last published thoughts on music writing dated the invention of neumes to somewhere close to 800, and Ken Levy, whose determination that Palaeofrankish scripts were a crucial element in the earliest layers of music writing puzzled me, until I realised he was right. These were two significant judgements that I eventually reached by different paths from Michel and Ken, and both surprised me. Much of what follows explains the reasoning behind those conclusions.

Reading manuscripts, and therefore work in many libraries, has been the indubitable foundation for this study. To have been allowed access to the precious records over which they have care or for other essential help, I especially thank the libraries and librarians at the Médiathèque Pierre-Amalric, Albi; the Staatsarchiv, Augsburg; the Bibliothèque municipale, Autun (Viviane Cattane); the Berlin Staatsbibliothek (Eef Overgaauw and Jean Christophe Gero); the Burgerbibliothek, Bern; Corpus Christi College, Cambridge (Christopher de Hamel); the Pendlebury Library, Cambridge (Anna Pensaert and Helen Snelling); the Bibliothèque municipale, Chartres (Michèle Neveu); the Univeritätsbibliothek Graz; the Universitätsbibliothek Heidelberg (Karin Zimmermann); the Dombibliothek Hildesheim (Jochen Bepler); the Historisches Archiv Köln (Max Plassmann); the Biblioteka Jagiellońska Krakow; the Bibliothèque municipale, Laon (Laurence Richard); the Bibliotheek der Rijksuniversiteit Leiden; the Universitätsbibliothek Leipzig (Christoph Mackert); the Biblioteca Ambrosiana, Milan; the Bayerische Staatsbibliothek (Monika Köstlin) and Universitätsbibliothek Munich; the New York Public Library (William Stingone); the Bodleian Library, Oxford (Martin Kauffmann); the Bibliothèque nationale de France (Charlotte Denoël); the Bibliothèque Mazarine (Céline Leroux) and Bibliothèque Sainte Geneviève, Paris; the Bibliothèque Carnegie, Reims (Sabine Maffre); the Stiftsbibliothek Sankt Gallen (Cornel Dora and Prisca Brülisauer); the Stadtbibliothek Trier (Reiner Nolden); the Bibliothèque municipale, Valenciennes (Marie-Pierre Dion); the Biblioteca capitolare Verona (Bruno Fasani); the Österreichische Nationalbibliothek, Vienna (Andreas Fingernagel); the Biblioteca Apostolica Vaticana; the Herzog August Bibliothek Wolfenbüttel (Christian Heitzmann); and the Zentralbibliothek Zürich (Anett Lütteken). Others to whom I am grateful for their help in tracking down books, records and digital images include Birgit Ebersperger, Dominique Gatté, Robert Klugseder and Julia Schneider.

In the production of the book, the technical knowledge and firm recommendations provided by Julia Craig-McFeely have been essential to the production of clearly presented music examples. Nicholas Ball has taken much care with the indexes. At Cambridge University Press Linda Bree, Victoria Parrin and Jan Baiton have used energy and initiative to make of what I offered to them a material object usable by interested readers, while acceptable to its sometimes fussy writer.

To the friends and colleagues who have been with me along the way, offering advice, criticism, practical support and increasingly urgent requests to see the book finished, I owe an enormous debt. Whether acting as interlocutor, enabler or advocate, the progress of my work has been aided by Meg Bent, Nicole Bériou, Michael Bernhard, Mary Carruthers, Katya Chernyakova, Eric Clarke, Fabrizio Crivello, Sean Curran, Daniel DiCenso, Consuelo Dutschke, Peter Erhart, Margot Fassler, Mirella Ferrari, Nathan Fitch, Pat Geary, Monique Goullet, Barbara Haggh-Huglo, Andreas Haug, Eduardo Henrik Aubert, Andrew Hicks, Emma Hornby, David Howlett, Tom Kelly, Peter Jeffrey, Robert Ladd, Michael Lapidge, Elsa de Luca, Florentine Mütherich†, Nigel Palmer, Christine Proust,

Daniel Saulnier, Martin Steinmann, Mariken Teeuwen, Giovanni Varelli, Christopher Whitton and Philipp Zimmerman. For their especial welcome during many visits to Munich, not to speak of friendship and encouragement, I thank Calvin Bower and Pam Piane.

Finally there are those who undertook the reading in more than one version of parts or all of my typescript and whose critical counsel has given immeasurable assistance, providing necessary guidance to find ways out of erroneous corners, refining and enriching my thought and expression. For this I thank Chuck Atkinson, Sam Barrett, Nicolas Bell, Calvin Bower, Michael Gullick and Tessa Webber, and most of all a long-suffering but wise and compelling advisor, as palaeographer and husband, David Ganz.

Susan Rankin
May 2017

Abbreviations

AM	*Acta Musicologica*
BG	*Beiträge zur Gregorianik*
BGRT	Bibliotheca scriptorum Graecorum et Romanorum Teubneriana (Leipzig: Teubner, 1849–)
BK	Bernhard Bischoff, *Katalog der festländischen Handschriften des neunten Jahrhunderts (mit Ausnahme der wisigotischen)*. I: *Aachen – Lambach*; II: *Laon – Paderborn*; III: *Padua – Zwickau* (Wiesbaden: Harrassowitz, 1998–2014)
CCCM	Corpus Christianorum continuatio mediaevalis (Turnhout: Brepols, 1966–)
CCSL	Corpus Christianorum series latina (Turnhout: Brepols, 1953–)
CESG	*Codices Electronici Sangallenses*
CLA	*Codices Latini Antiquiores: A Palaeographical Guide to Latin Manuscripts prior to the Ninth Century*, ed. Elias Avery Lowe, 11 vols. (Oxford: Clarendon Press, 1934–66) and *Supplement* (1971). 1: *The Vatican City*; 2: *Great Britain and Ireland*; 3: *Italy: Ancona–Novara*; 4: *Italy: Perugia–Verona*
CLLA	Klaus Gamber, *Codices liturgici latini antiquiores*, Spicilegii Friburgensis subsidia, 3 vols. (2nd rev. edn, Freiburg, Switzerland: Universitätsverlag, 1968–88)
CNRS	Centre nationale de la recherche scientifique
CSM	Corpus scriptorum de musica (Rome: American Institute of Musicology, 1950–)
DA	*Deutsches Archiv*
DACL	*Dictionnaire d'archéologie chrétienne et de liturgie*, ed. Fernand Cabrol, Henri Leclerq and Henri Marrou, 15 vols. (Paris: Letouzey et Ané, 1907–53)
EG	*Études grégoriennes*
EL	*Ephemerides liturgicae*
EMH	*Early Music History*
GN	*Graduale novum editio magis critica iuxta SC 117*. I: *De dominicis et festis* (Regensburg: ConBrio, 2011)
GT	*Graduale triplex*, ed. the monks of Solesmes (Solesmes: Abbaye Saint-Pierre de Solesmes & Tournai: Desclée, 1979)
JAMS	*Journal of the American Musicological Society*
KmJb	*Kirchenmusikalisches Jahrbuch*

LmL	*Lexikon musicum latinum*, ed. Michael Bernhard (Munich: Bayerische Akademie der Wissenschaften, Beck, 1992–) http://woerterbuchnetz.de/ /LmL/
MAS	Bernhard Bischoff, *Mittelalterliche Studien*, 3 vols. (Stuttgart: Hiersemann, 1966–81)
MGG 1	*Die Musik in Geschichte und Gegenwart*, ed. Friedrich Blume, 17 vols. (Kassel: Bärenreiter, 1949–86)
MGH	*Monumenta Germaniae Historica*

A: *Antiquitates. Poetae Latini Medii Aevi*
EP: *Epistolae*
LL: *Leges*
SS: *Scriptores*

NG 1	*The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie, 20 vols. (London: Macmillan, 1980)
NG 2	*The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie and John Tyrrell, new edn, 29 vols. (London: Macmillan, 2001) www.oxfordmusicon line.com
nu	neumes undatable
PM	*Paléographie musicale. Les principaux manuscrits du chant grégorien, ambrosien, mozarabe, gallican* (Solesmes, 1889–)

1: *Le Codex 339 de la bibliothèque de St. Gall (Xe siècle). Antiphonale missarum Sancti Gregorii* (Solesmes: Abbaye Saint-Pierre, 1889–90)

2–3: *Le Répons 'Iustus ut palma' reproduit en fac-similé d'après plus de deux cents antiphonaires manuscrits d'origine diverses du IXe au XVIIe siècle* (Solesmes: Abbaye Saint-Pierre, 1891–2)

4: *Le Codex 121 de la Bibliothèque d'Einsiedeln (X–XIe siècle), Antiphonale missarum Sancti Gregorii* (Solesmes: Abbaye Saint-Pierre, 1894)

7–8: *Antiphonarium tonale missarum, XIe siècle, Codex H 159 de l'École de Médecine de Montpellier* (Solesmes: Abbaye Saint-Pierre, 1901–5)

10: *Antiphonale missarum Sancti Gregorii, IX–Xe siècle, Codex 239 de la Bibliothèque de Laon* (Tournai: Desclée, 1909)

11: *Antiphonale missarum Sancti Gregorii, Xe siècle, Codex 47 de la Bibliothèque de Chartres* (Tournai: Desclée, 1912)

13: *Le Codex 903 de la Bibliothèque nationale de Paris (XIe siècle, Graduel de St. Yrieix)*, (Tournai: Desclée, 1925)

14: *Le Codex 10673 de la Bibliothèque Vaticane, fonds latin (XIe siècle), Graduel Bénéventain* (Tournai: Desclée, 1936)

15: *Le Codex VI.34 de la Bibliothèque capitulaire de Bénévent (XI–XIIe siècle), Graduel de Bénévent avec prosaire et tropaire* (Tournai: Desclée, 1937)

16: *Le Manuscrit du Mont-Renaud. Xe siècle. Graduel et antiphonaire de Noyon* (Solesmes: Abbaye Saint-Pierre, 1955; 2nd edn, P. Lang: Bern, 1989)

2e sér. 2: *Cantatorium, IXe siècle, N° 359 de la Bibliothèque de St Gall* (Tournai: Desclée, 1924)

PMM	*Plainsong and Medieval Music*
RasG	*Rassegna Gregoriana*
RB	*Revue Bénédictine*
RG	*Revue Grégorienne*
RISM	*Répertoire international des sources musicales*
RMP	*Revue de la musique religieuse, populaire et classique*
SK	Dieter Schaller and Ewald Könsgen, *Initia carminum Latinorum saeculo decimo antiquiorum* (Göttingen: Vandenhoeck and Ruprecht, 1977)
VMK	*Veröffentlichungen der musikhistorischen Kommission, Bayerische Akademie der Wissenschaften* (Munich: Beck)

*   elementary script

PART I

Musical Literacy

1

Writing Music

> Music is the practical knowledge of modulation and consists of sound
> and song ... Their sound [the muses], because it is something per-
> ceived by the senses, vanishes as the moment passes and is imprinted on
> the memory ... for unless sounds are held by the memory of man, they
> perish, because they cannot be written down.[1] (*Etymologiae* III.xv)

Composing a 'summa' of knowledge at the end of the first quarter of the seventh century,[2]
Isidore, Archbishop of Seville, organized his material around the idea of etymology, the form
and meaning of individual words. Using this tool to illuminate his subject matter, Isidore's
programme dealt first with the classical liberal arts (Book I: grammar, Book II: rhetoric and
dialectic, Book III: mathematics, music and astronomy), then with medicine, law, the
church, languages, the natural world (animals, the cosmos, the earth), material culture
(buildings, metals, ships) and war.[3] Seeking to uphold Christian faith and values in the
old Roman province of Hispania, Isidore was highly aware of the threat to antique Western
culture and its layers of knowledge posed by the heresy of Arianism, barbarian advances and
the emergence of Islam in North Africa. This response, the culmination of Isidore's life as
a Christian writer, provided a bulwark against intellectual error, so that Christians 'without
access to a rich store of books' – lay as well as clerical – could nevertheless master knowledge
and thus defend the Roman church.[4] Driven by a strong concern with the preservation in

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[1] 'Musica est peritia modulationis sono cantuque consistens ... Quarum sonus, quia sensibilis res est, et
praeterfluit in praeteritum tempus inprimiturque memoriae ... Nisi enim ab homine memoria teneantur soni,
pereunt, quia scribi non possunt.' Isidore, *Etymologiarum sive originum libri XX*, ed. Wallace M. Lindsay, 2
vols., Scriptorum classicorum bibliotheca Oxoniensis (Oxford: Clarendon Press, 1911), III.xv. This translation
from *The* Etymologies *of Isidore of Seville*, trans. Stephen A. Barney, W. J. Lewis, J. A. Beach and
Oliver Berghof (Cambridge University Press, 2006), 95.

[2] *The* Etymologies, trans. Barney *et al.*, 3.

[3] On the selection of topics to be treated in this encyclopedic work much has been written: Fontaine argues
for Augustine's *De doctrina christiana* as Isidore's most direct inspiration. See Jacques Fontaine, *Isidore de
Séville. Genèse et originalité de la culture hispanique au temps des Wisigoths* (Turnhout: Brepols, 2000), 176.

[4] *Ibid.*, 19. For a concise consideration of Isidore's motivations in writing the Etymologies see Fontaine,
Isidore de Séville. Genèse, 174–6.

written records of intellectual thought in its older and newer forms, Isidore's encyclopedic (but unfinished) work would thus attempt to include 'all the knowledge and activity of his times'.[5]

Isidore's evidently regretful description of the evanescence of musical sound, set at the beginning of nine paragraphs about music, should be heard in the context of what comes before. For the work opens with the declaration: 'letters are tokens of things, the signs of words, and they have so much force that the utterances of those who are absent speak to us without a voice. The use of letters was invented for the sake of remembering things, which are bound by letters lest they slip away into oblivion.'[6] Isidore was extremely aware of the extent to which letters could externalize knowledge: writing provided an intellectual reach beyond that of a single speaking and hearing individual. Indeed, the whole of Isidore's enterprise in compiling the *Etymologies* was very much about the preservation and transmission of knowledge,[7] since 'with so great a variety of information, not everything could be learned by hearing, nor retained in the memory'.[8]

Since the study of etymology is a science that depends on writing, using the ways in which words are written to obtain its results, at a fundamental level Isidore's work was composed through and about the medium of language in its written form. In this sense, his adoption of Varro's term *litteratio* (literally 'lettering', basic knowledge in reading and writing) is merely the first of many indications of his trust in writing as a means of communication.[9] Indeed, Parkes has argued that Isidore's *Etymologies* marks a period of change in the status of the written word.[10] Rather than Augustine's model whereby written letters are considered to be signs of sounds, '[so] that we might be able to converse even with the absent',[11] Isidore 'regarded letters of the alphabet as signs *without* sounds',[12] since they have the power to

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[5] 'tout le savoir et toute l'activité de son temps'. Jacques Fontaine, *Isidore de Séville et la culture classique dans l'Espagne wisigothique* (Paris: Études Augustiniennes, 1959), 11.

[6] 'Litterae autem sunt indices rerum, signa verborum, quibus tanta vis est, ut nobis dicta absentium sine voce loquantur. Vsus litterarum repertus propter memoriam rerum. Nam ne oblivione fugiant, litteris alligantur.' Isidore, *Etymologiarum*, ed. Lindsay, I.iii. *The* Etymologies, trans. Barney *et al.*, I.iii.

[7] See *The* Etymologies, trans. Barney *et al.*, 'Introduction', 10ff. There is no clear statement of purpose anywhere in the *Etymologies*, but Isidore's contemporary, Braulio, wrote in 636 that 'whoever thoughtfully and thoroughly reads through this work, which is suited to philosophy in every respect, will not be ignorant of the knowledge of human and divine matters . . . Overflowing with eloquence of various arts with regard to nearly every point of them that ought to be known, it collects them in summarized form': *The* Etymologies, trans. Barney *et al.*, 'Introduction', 8.

[8] 'In tanta enim rerum varietate nec disci audiendo poterant omnia, nec memoria contineri'. Isidore, *Etymologiarum*, ed. Lindsay, I.iii. *The* Etymologies, trans. Barney *et al.*, I.iii.

[9] See Fontaine, *Isidore de Séville et la culture classique*, 57ff.

[10] Malcolm Parkes, *Pause and Effect. An Introduction to the History of Punctuation in the West* (Aldershot: Scolar Press, 1992), 20ff.

[11] 'Inuentae sunt etiam litterae per quas possemus et cum absentibus conloqui, sed ista signa sunt uocum, cum ipsae uoces in sermone nostro earum quas cogitamus signa sint rerum.' Augustine, *De trinitate*, ed. William J. Mountain, CCSL 50-50A (Turnhout: Brepols, 1968), XV.x.19.

[12] Parkes, *Pause and Effect*, 21.

convey 'the utterances of those who are absent . . . without a voice'.[13] Thus, the reader moves from Augustine's single-level model of signs and meaning:

speech   → (can be heard through the signs of written language)   → meaning

to Isidore's dual model:

written language   → meaning
+
speech   → (can be heard through the signs of written language)   → meaning

Indeed, in one group of early manuscripts of the *Etymologies* – eighth- and ninth-century copies from Visigothic Spain – Isidore's text is transmitted with the interpolation (following 'those who are absent speak to us without a voice') 'for they present words through the eyes, not through the ears'.[14] Even though the significance of sound, as the basis for the letters of which words are made, remains fundamental to Isidore's conception ('those who are absent *speak*'), he was nevertheless conscious that absent singers did not 'speak' (sing): they remained silent, unless the memory could re-create their sound.

Isidore's implication that musical art was poorly served through its lack of a written medium is underlined by his collection, again within this first book of the *Etymologies*, of the largest set of manifestations and uses of writing yet described in the context of a grammar:[15] among late antique grammars, this attention to all kinds of written marks is entirely original.[16] Besides several passages on letters (origins of the alphabet, the different qualities of letters, phonetic issues, orthography), he provides information about written marks (*notae*) associated with:

Accents (*de figuris accentuum*)
Punctuation (*de posituris*)
Critical signs (*de notis sententiarum*)
Shorthand signs (*de notis vulgaribus*)
Signs used in law (*de notis iuridicis*)
Military signs (*de notis militaribus*)
Epistolary signs (*de notis litterarum*)

And after all of that he includes a passage on finger signals (*de notis digitarum*) whereby 'those at a distance can silently communicate with each other'.[17] More signs without sound. Most manuscripts preserve records of the forms of these various signs: a page from a copy made in northern Italy in the second half of the eighth century is shown in Figure 1.

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[13] See n. 6 above.
[14] 'Verba enim per oculos non per aures introducunt'. Isidore, *Etymologiarum*, ed. Lindsay, I.iii.
[15] See Fontaine, *Isidore de Séville et la culture classique*, 57ff; and Parkes, *Pause and Effect*, 21–2.
[16] Fontaine, *Isidore de Séville et la culture classique*, 57.
[17] 'quibus secum taciti proculque distantes conloquuntur'. Isidore, *Etymologiarum*, ed. Lindsay, I.xxvi. *The* Etymologies, trans. Barney *et al.*, 52.

Figure 1 Wolfenbüttel, Herzog August Bibliothek Cod. Guelf 64 Weissenburg, fol. 14r.

In this strange and uneven assemblage of information about forms of writing used across a range of human activities,[18] the signs described can be separated into two classes. In one group, there are signs that act to enhance comprehension of a written text that they accompany: accents, which help to distinguish the sound of parts of words, punctuation, which helps to distinguish larger parts of a text (grammatical clauses), and critical signs, which can be used 'to show a particular judgment about a word or sentences or verses'.[19] These last were of especial value in carrying out textual criticism, in order to correct a received text; thus, an *asteriscus* would show that something had been omitted, an *obolus* (horizontal stroke) would indicate a word or sentence repeated unnecessarily, a *lemniscus* (horizontal stroke between two dots) a reference to a scriptural passage. In the other group can be classified all those written signs that act as substitutes for writing in words: shorthand, military signs and epistolary or secret ways of writing (cryptography). This second group of writing systems includes all those that would have been profession-ally learnt, and is limited to small groups of practitioners, as necessary. In contrast, the first group had belonged within the teaching of grammar since classical antiquity, and thus within the elementary levels of literacy. Isidore's unparalleled collecting of graphic signs may have been prompted by the belief that 'every graphic sign is a material manifestation of the Revelation recorded in scripture';[20] yet, on a more mundane level, his attempt to encompass every graphic sign was also driven by practical concerns, by his curiosity about human learning, pagan as well as Christian. He was genuinely inquisitive about those ways in which writing could be used, and evidently challenged by the lack of a system for writing musical sound.

Isidore of Seville provides a useful example of how, in late antiquity, an educated Christian might think about writing, about its value and about its use in relation to sound, spoken and sung. There is no evidence that systems for the notation of music used by the ancient Greeks until as late as the fourth century CE were ever in circulation in western Europe. The world of intellectual thought and religious practice in which Isidore moved in the early decades of the seventh century was not one in which anyone used graphic signs to write music on a surface: in this his words are surely definitive. Isidore's words might have stimulated others interested in resolving this graphic challenge, but it was not until a later period that that stimulus proved strong enough for the task to be carried through in such a way as to allow and encourage multiple uses and developments of new graphic techniques. Yet the value of invoking Isidore as authority in an account of the emergence of music writing is not so much to demonstrate the absence of knowledge of how to do this in the

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[18] Fontaine notes that some of these signs are in current use around Isidore, and others not: see his *Isidore de Séville et la culture classique*, 80–4.

[19] 'ad demonstrandum unamquamque verbi sententiarumque ac versuum rationem'. Isidore, *Etymologiarum*, ed. Lindsay, I.xxi. *The* Etymologies, trans. Barney *et al.*, 50.

[20] 'tout signe graphique est le support matériel de la Révélation consignée dans l'*Écriture*': Fontaine, *Isidore de Séville et la culture classique*, 57.

early seventh century, as to respond to the seeming paradox set by the appearance of graphic signs for music. In an otherwise highly literate world, in which music was set apart, sung according to oral/aural methods of communication, why should anything change? Indeed, leaving aside the obvious deduction that Isidore would have enjoyed recordings of music, his description of music as something that vanishes as the moment passes remains permanently true. It is only with recognition of that condition, of sound as a sensory experience that happens in real time, that any kind of graphic signs dealing with musical sounds *could* be invented. Returning to the paradox: it is within Isidore's delight in a multiplicity of graphic signs, many of which he has found out about, even though they have very limited usage, that we find detailed evidence of cultural mentality about writing in the late antique period. Where one musician might feel satisfied with the current state of affairs, another might not; and yet another might begin to experiment with graphic possibilities, encouraged and enlightened by the kind of information Isidore presents.

The value of writing as record, the discipline of writing well (taught through grammar),[21] the model of a host of rapidly written but distinct graphic signs, and finally, two subjects of very direct interest for the musician – marks that show the rise and fall of the voice within individual words (accents) and marks that show the articulation of the voice over groups of words (punctuation) – all of this can be found in Isidore's *Etymologies*. While there is no reason to consider Isidore's text as more critical to those who eventually thought about and devised graphic signs for music than any other late antique grammatical text, nonetheless, the breadth of matter dealt with by Isidore and the widespread dissemination of his text during the late eighth and ninth centuries renders it a useful starting point for considering those signs.

* * *

If musical literacy is defined as elementary knowledge of how to represent music with written signs and how to read them, the transition to a culture in which musical literacy materialized was made before 900: if the extant manuscripts are considered a reasonable guide, musical literacy became widespread in Europe during the period between 800 and 900. Evidence for substantial notation of the repertory of Roman-Frankish (Gregorian) chant – in the form of extant notated books of chant – does not appear until the last two decades of the ninth century. Yet, at the point at which this sizeable melodic repertory surfaces in written form, it emerges in abundance: notations for mass and office chants in books and fragments that can be dated to the late ninth and early tenth centuries appear in six distinct systems of script, written in different parts of Europe.[22] That abundance suggests

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[21] That is, 'writing' encompassing the physical discipline of writing *and* the formation of letters, words and longer textual structures. Here I play with a *topos* common in late antique grammars: 'Grammatica est scientia recte loquendi' ('Grammar is the knowledge of speaking correctly'): Isidore, *Etymologiarum*, ed. Lindsay, I.v; *The* Etymologies, trans. Barney *et al.*, 42.

[22] In this book I use 'script' to signify 'a way of writing', thus systems for representing musical sound in writing, and 'notation' to signify 'the written thing', thus specific instances of written musical texts.

an earlier invention and considerable development before 900. These notations provide information about an extraordinary range of elements of musical sound: besides the direction of melodic movement, they communicate information about duration, intensity, articulation, tone-colour, even voice-production. Why this new way of writing was invented at that point in European history, rather than before or after, is a question of immense interest: the search for an explanation leads the questioner into a rich field of evidence about musical practice, writing and reading, orality and memory, and the developing material culture of liturgical books.

Although issues of function will be addressed in this study, it is not the why so much as the how that has determined its questions and its shape: at the most basic conceptual level, the way in which sound was analysed – abstracted into separate parameters, which could then be written as distinct graphic marks, and arranged within a particular spatial framework – has governed my enquiry: my focus is quite simply how the Carolingians made graphic signs in order to represent sound visually. In order to be able to investigate those ways in which musical signs were invented and then systematized into disciplined scripts and organized notations, my starting point had to be the surviving examples of music notation written in this first century of its use in western Europe. Although such material has formed a magnet for study for almost two centuries, it has been possible in the first years of a new millennium to make a completely new start in assembling the evidence for ninth-century music notations. This course of action was directly stimulated by the publication between 1998 and 2014 of a catalogue of ninth-century manuscripts made in continental Europe, excepting Visigothic.[23] Bernhard Bischoff did not live to see the publication of even the first of his epoch-making volumes; the second and third volumes have been assembled on the basis of his extensive notes, rather than from prepared typescripts; and it is not clear that, before his death in 1991, he had had a proper chance to review his earlier selection of manuscripts in libraries from Passau to Zwickau (excepting Turin and Trier).[24] Nevertheless, this catalogue, combined with his own manuscript notes (which often include much more detail than appears in the catalogue), has offered a wealth of information about manuscripts with music notation not otherwise known to the musicological community as well as reasoned datings for manuscripts already well-known to that community. Bischoff's catalogue can be used as the basis for an entirely new assessment of the number, nature and quality of early medieval music notations.[25] The first part of the present book is therefore dedicated to a palaeographical *tour d'horizon*, first dealing with the history of palaeographical study of

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[23] Bernhard Bischoff, *Katalog der festländischen Handschriften des neunten Jahrhunderts (mit Ausnahme der wisigotischen)* I: *Aachen–Lambach*; II: *Laon–Paderborn*; III: *Padua–Zwickau* (Wiesbaden: Harrassowitz, 1998–2014).

[24] See the reviews of Bischoff, *Katalog* III by David Ganz, *Francia* 42 (2015), 253–72, and Hartmut Hoffmann, 'Bernhard Bischoffs Katalog der karolingischen Handschriften', *Deutsches Archiv* 71 (2015), 1–56.

[25] On the opportunities offered by and qualifications of Bischoff's judgements see below, pp. 88–92.

early medieval music notations, and then presenting a new appraisal of the manuscript sources, variety of scripts and diversity of ways in which music writing was used in the period 800–900.

In the second part of the book, music scripts become the main object of review: passages of notation (rather than individual signs or 'neumes') provide the basis for an archaeological examination of the characteristics of ninth-century music scripts, and the differences and interrelationships between them. A key issue here is the agency of individual scribes. Ninth-century practitioners of music were surrounded by material objects that reflected literate modes of communication and thinking: in educated Carolingian society, literacy was elevated to a cultural ideal. Many aspects of musical practice were already affected by literate usage, without the idea of writing musical sound on parchment even being invoked: the standardization of texts sung in the liturgy, the codification of this material in particular book types, the formulation in the theory of modes of a musical grammar, an important part of which would normally be recorded in lists – a form specific to writing,[26] and finally, the transmission and dissemination of Greek speculative music theory, mainly through the books on music by Martianus Capella and Boethius. It was in this highly literate milieu that music writing was invented, taken up, shared and developed by scribes to such an extent that six distinct types of music script can be identified in manuscripts written by 900. But why was music writing changed, developed and refined by scribes? Why did it acquire such particular individual local and regional identities? In an initial stage, before the establishment of widely recognized and relatively fixed music script procedures, the graphic representation of music must have been undertaken by scribes of many kinds: some living in large, well-endowed communities, in contact with new and diverse literate behaviours, others in poorer situations, but keenly interested in books and writing, and still others who were musically gifted, able to pick up the bones of a new writing technology and exploit it to their own precise musical ends. Therefore the impact of practical innovations by individual scribes could vary considerably, and represent both graphic *and* procedural change. Those abundant channels of graphic proliferation are hardly reconstructable now. Yet the exercise of trying to dig backwards, the attempt to isolate successive moments of change whereby one type of graphic representation of musical sound was altered to generate another, and finally to uncover what came first, may throw light on the impulses that guided the invention and use of music writing before 900.

How transformational was the invention of a way of representing music in writing? To what extent could this be described as a paradigm shift? The task of the third part of the book is to set the new music scripts into a wider historical and cultural context, examining the attitudes revealed in early script designs and later refinements of them in terms of the new energies of the Carolingian era: the exploration of what writing could

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[26] On lists as a written form see Jack Goody, *The Domestication of the Savage Mind* (Cambridge University Press, 1977), 80ff.

achieve, the mentality of *correctio* and control of cultural practice, specifically a greater management of standards of Latinity, and finally eloquence in singing Roman liturgy, itself determined by rhetorical schemes reflected in Gregorian (i.e. Roman-Frankish) chant. It is abundantly clear that, in the ninth century, changes in musical practice using writing were neither simple nor dramatic: it was not a matter of moving from 'habitually remembering things' to 'writing them down and keeping records'.[27] Music notations written in the ninth century remain closely tied to orality, indeed there is little evidence that orality was supplanted to any great extent: far more, these notations acted to support and to control oral practice. There are other levels on which music writing may have acted to restructure consciousness, however,[28] since its emergence could encourage literate ways of thinking about music, and thus advance musical knowledge. Therefore, in the third part, fresh perspectives won in the first two parts on the design and development of musical signs in the early Carolingian period are integrated into a new narrative about music writing as an element of Carolingian intellectual and cultural practice. Previous studies of early notations have consistently read them in relation to modern systems for the notations of music, assuming pitch and rhythm as the most significant constituents; the lack of precision in relation to these parameters (as conceived in the modern age) has led many to consider early music notations as primitive, only slowly 'evolving' to become more like later notations. If examined with consciousness of this teleological confusion, an entirely different picture emerges. Changes in the way in which music was intellectually conceived provide the rationale for significant early modifications of the first system devised, while scribal innovations in an inherently highly adaptable system account for the extreme diversity encountered by the end of the ninth century – before music script systems became more fixed. While the invention of music scripts demands the broader context of widespread Carolingian interest in scripts for its explanation, it is with the more focused concern for correct expression of text in the liturgy that the most refined and detailed notations belong. Considered as an analogue to texts, music should be an integral part of the enterprise to sing 'with sense and understanding': by 900 the conceptual frameworks and systems of graphic signs available to the best scribes could support that enterprise.

Finally, an important aspect of methodology should be explained. As a medium of individual expression, writing was never fixed, its graphic shapes and their meaning unchanging across time. Rather writing has existed as a 'fluid set of practices, shifting in response to changing historical circumstances, conditions of learning, and arenas of patronage and use'.[29] This must be as true for music writing as for any other manifestation of script written

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[27] Michael Clanchy, *From Memory to Written Record. England 1066–1307* (2nd rev. edn, Oxford: Blackwell, 1993), 3, describing a shift that *did* move from a habitual dependence on memory to the use of written records.

[28] On this in general see Walter Ong, *Orality and Literacy. The Technologizing of the Word* (London and New York: Routledge, 1982), Ch. 4.

[29] Stephen D. Houston, 'Preface', in *idem* (ed.), *The Shape of Script. How and Why Writing Systems Change* (Santa Fe: SAR Press, 2012), xiii.

by a hand rather than printed. Therefore, if historical insight into music writing is to be gained, it is essential that writing systems not be dehistoricized, that synchronic assumptions not be applied. Moreover, the process of changing consciousness and developing knowledge of music could itself in turn generate new changes in the music scripts themselves. The dynamic process unleashed by the invention of music writing – along with other new kinds of knowledge such as Greek speculative theory – needs to be respected. Said very simply, it cannot be presumed that music notations written in the eleventh century rest on the same understandings of musical practice and theory, and therefore have the same meanings, as music notations written in the ninth century. These considerations underlie my rule in this study that no example of notation written after the early tenth century should become a part of the argument. The restriction of the material interrogated to examples of writing that could be dated before circa 925 allows for the unavoidable uncertainty of dating to a precise limit of 900; it also allows the most significant (since substantial) early manuscripts notated in Palaeofrankish and Breton scripts to be included in the study. This later limitation for the analytical investigation of scripts does not apply to the collection of examples of music notations written in the ninth century, which stands as 800–900. These are listed under script types in Chapter 3 and by library in the appendix.

2

Palaeographical Study of Neumatic Notations (from 1681 to the Present)

2.1 1681–1889: FROM PALAEOGRAPHY TO '*PALÉOGRAPHIE MUSICALE*'

Iam vero sæculo nono eiusmodi litteris substitutæ sunt notulæ caudatæ,
quales etiam nunc apud musicos in usu habentur, sed absque lineolis,
quæ modum seu mensuram exaltationis vel depressionis in cantu
præcise designant. Tales sunt notulæ in codice Ratoldi, cuius occasione
hæ observationes factæ sunt.[1]

A sacramentary-pontifical made for Abbot Ratoldus of Corbie (972–86) was brought from Corbie to the library of the Congregation of Saint-Maur at St-Germain-des-Prés in Paris in 1638.[2] That is where the young Mabillon, who came to St-Germain in 1664,[3] would have been able to turn the pages of the book. Although Mabillon's description of neumes appears in the fourth volume of his annals of the Benedictine order – published in the year of his death (1707) – he had already reproduced copies of three passages from the manuscript in his most famous work, the *De re diplomatica*, in 1681.[4]

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[1] 'Now in the ninth century notes with stems were substituted for these kinds of letters, much like those used among contemporary musicians, but without the lines, which designate precisely the manner or measure of ascending or descending in song. The notes in the codex of Ratoldus were like this, on the occasion of which these observations were made.' Dom Jean Mabillon, 'Observationes in notas musicas', in his *Annales ordinis sancti Benedicti occidentalium monachorum patriarchae*, 4 vols. (1st edn, Paris: Lutetiae-Parisiorum, 1703–7), IV, 688–9; the annals were reprinted, with two further volumes, in 1739: here the same passage appears in Vol. IV, 632–3. The word 'palaeographia' was first used in the year after Mabillon's death (1708): in Bernard de Montfaucon, *Palaeographia graeca siue de ortu et progressu literarum graecarum, et de variis omnium sæculorum scriptionis Græcæ generibus : itemque de Abbreviationibus & de Notis variarum Artium ac Disciplinarum* (Paris: Guerin, 1708). Montfaucon clarifies his use of 'palæographia' as a term for all that pertains to antique scripts (Preface, i).

[2] Now BNF lat. 12052. The text is edited by Nicholas Orchard in *The Sacramentary of Ratoldus (Paris, Bibliothèque nationale de France, lat. 12052)*, Henry Bradshaw Society 116 (Woodbridge: Boydell & Brewer, 2005).

[3] Dom Henri Leclerq, *Dom Mabillon*, 2 vols. (Paris: Letouzey et Ané, 1953–7), I, 57; rep. in Daniel-Odon Hurel (ed.), *Le moine et l'historien Dom Mabillon. Œuvres choisies* (Paris: Robert Laffont, 2007), 25.

[4] His engravings show passages in rustic capitals and in Caroline minuscule, but no neumes. Dom Jean Mabillon, *De re diplomatica libri VI* (Paris: Lutetiae-Parisiorum, 1681), V, Table 12 (pp. 366–7). In his

For Dom Jean Mabillon, founder of the historical discipline of palaeography,[5] the writing of music belonged to the science of palaeography, but it was a long way from the study of charters that had prompted his palaeographical *chef d'œuvre*. Besides, he was evidently confused by the little knowledge he did have: his description of music notation in 'little lines' sits beside a full transcription of the alphabet of *litterae significativae* already attributed to Notker Balbulus of Sankt Gallen in the first half of the tenth century.[6] Since Mabillon associated music notation in letters with practice before the ninth century, the Notkerian alphabet appeared as an important part of the story, but it must have left him perplexed, since the *litterae significativae* do not connect with the late antique system for denoting discrete pitches at all.

Even if the modern study of music notations written in neumes can be traced back to the late seventeenth and early eighteenth centuries, such studies did not attempt to treat neumes in their own terms but tended to classify them from a historical point of view as a system of music script that sat between the alphabetic letters for notes described by Boethius and Guidonian notation on staves.[7] It was only in the mid-nineteenth century that examinations of these musical signs began seriously to make progress in reading them and interrogating their origins and meanings. In the course of his involved discussion of proposals about the origin of neumes advanced by Raphaël Georg Kiesewetter,[8] François-Joseph Fétis[9] and

edition of this sacramentary, Nicholas Orchard identified the folio numbers for the passages reproduced (*The Sacramentary of Ratoldus*, xvii).

[5] On this aspect of Mabillon's scholarship see esp. Léon Levillain, 'Le "de re diplomatica"' in *Mélanges et documents publiés à l'occasion du 2ᵉ centenaire de la Mort de Mabillon* (Ligugé and Paris: Abbaye de Saint Martin, 1908), 195–252; Ludwig Traube, *Zur Paläographie und Handschriftenkunde*, ed. Paul Lehmann, Ludwig Traube Vorlesungen und Abhandlungen 1 (Munich: Beck, 1909), 20ff; Dom David Knowles, *Great Historical Enterprises. Problems in Monastic History* (London and New York: Nelson, 1963), 43ff.

[6] For the text of the letter see Notker, 'L'épître de Notker sur les "lettres significatives": édition critique', ed. Dom Jacques Froger, *EG* 5 (1962), 23–71; textual variants show Mabillon's text to be that of the earliest extant copy of the letter, from CSG 381, pp. 6–9.

[7] On the early modern study of neumatic notations see Dom André Mocquereau, 'L'usage des fac-similés dans l'archéologie musicale du XVIIe siècle jusqu'au nos jours', in his introduction to *Le Codex 339 de la bibliothèque de St. Gall (Xᵉ siècle). Antiphonale missarum sancti Gregorii, PM* 1 (1889), 7–18; Peter Wagner, 'Geschichte der Neumenforschung', in his *Einführung in die Gregorianischen Melodien 2: Neumenkunde. Paläographie des liturgischen Gesanges* (2nd rev. edn, Leipzig: Breitkopf & Härtel, 1912); Ewald Jammers, *Tafeln zur Neumenschrift* (Tutzing: Hans Schneider, 1965), 3–16; Jacques Hourlier, 'L'origine des neumes', in *Ut mens concordet voci. Festschrift Eugene Cardine zum 75. Geburtstag*, ed. Johannes Berchmans Göschl (St. Ottilien: Erzabtei St. Ottilien, 1980), 354–60; and Eduardo Henrik Aubert, 'Historicizing Neumatic Notation: Medieval Neumes as Cultural Artefacts of Early Modern Times', *Studies in Medievalism* 21 (2012), 65–87.

[8] *Geschichte der europäisch-abendländischen oder unserer heutigen Musik. Darstellung ihres Ursprungs, ihres Wachsthums und ihrer stufenweise Entwicklung; von dem ersten Jahrhundert des Christenthums bis auf unsere heutige Zeit* (Leipzig: Breitkopf & Härtel, 1834).

[9] 'Résumé philosophique de l'histoire de la musique', *Biographie universelle des musiciens*, 5 vols. (Paris: H. Fournier, 1835–44), I, xxxvii–ccliv (clx–clxvi).

Théodore Nisard,[10] Edmond de Coussemaker declared that *he* had discovered their origin and could present proofs.[11] In the work of Nisard, Coussemaker had found a useful starting point from which to launch his own manifesto: dismissing the link Nisard had suggested between neumes and Tironian notes, Coussemaker nevertheless noted that 'ce musicologue a été frappé, comme par une sorte d'instinct, de l'idée que les neumes ont leur origine dans l'écriture, mais il n'en a pas découvert le véritable principe'.[12] This idea of finding the origin of neumes in other forms of writing allowed him immediately to state, tersely:

> Les neumes, suivant nous, ont leur origine dans les accents. L'accent aigu ou l'arsis, l'accent grave ou la thésis, et l'accent circonflexe, formé de la combinaison de l'arsis et de la thésis sont les signes fondamentaux de tous les neumes.[13]

Coussemaker finished this chapter on neumatic notations with the claim that his theory had palaeographical and therefore historical value.[14]

Pure historical interest may have provided one frame of reference for the study of neumatic notations, but it was restoration of the music of the church, and especially Gregorian chant, which had had the most direct impact on the study of neumatic notations in the period just before the publication of Coussemaker's history of medieval music in 1852. Already in 1843, Dom Prosper Guéranger – refounder of the Abbey of Solesmes in 1833 – had called for revision of liturgical melodies on the basis of study of neumes.[15] But Guéranger,

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[10] Théodore Nisard, 'Étude sur les anciennes notations musicales de l'Europe', in five parts: *Revue archéologique* 5 (Oct. 1848–March 1849), 701–20; 6 (April–Sep. 1849), 101–14, (Oct. 1849–March 1950), 461–75, 749–64; 7 (April–Sep. 1850), 129–43.

[11] Coussemaker, *Histoire de l'harmonie au moyen age* (Paris: V. Didron, 1852), 155: 'M. Fétis et M. Th. Nisard seuls l'ont nettemont abordée, et résolue chacun à leur point de vue; mais ni l'un ni l'autre n'en ont donné la véritable origine. Nous croyons l'avoir trouvée, et nous espérons être assez heureux pour apporter à l'appui de notre opinion des raisons concluantes et même des preuves que nous croyons péremptoires.' For accounts of the study of neumes between the beginning and the end of the nineteenth century, centred around the work of specific scholars, see Jules Combarieu, 'Essai sur l'archéologie musicale au XIXᵉ siècle et le problème de l'origine des neumes', in his *Études de philologie musicale* 1 (Paris: Picard et fils, 1897), 115–92; and Henri Leclerq, 'Notation neumatique', *DACL*, 1640–69.

[12] 'This musicologist was struck, as if instinctively, by the idea that neumes have their origin in writing, but he did not discover the true principle of this.' Coussemaker, *Histoire*, 158.

[13] 'In our view neumes have their origin in accents. The acute accent or *arsis*, the grave accent or *thesis*, and the circumflex accent, formed from the combination of *arsis* and *thesis*, are the signs fundamental to all neumes.' *Ibid.*, 158.

[14] *Ibid.*, 160.

[15] In a letter to the editor of *l'Univers*, published 23.11.1843, which speaks scathingly of those amateurs who would seek to restore chant on the basis of, for example, discovering an antiphoner of Clairvaux in Bar-sur-Aube; his point is that it is the earlier notated manuscripts (not yet 'déchiffrée') that will reveal 'the true substance of Gregorian chant' ('la véritable teneur du chant grégorien'). Guéranger's more famous *Institutions liturgiques* of 1840–51 (3 vols., Le Mans: Fleuriot) certainly calls for the restoration of Gregorian chant, but does not address problems of notation and the age of manuscripts. For a useful reassessment of Guéranger's liturgical

however influential at this time (and later), was responding to a more widely held view, and a quiet Benedictine Abbey in western France was not at this time the leading authority on, or even arena for, the study of neumatic notations.[16] That terrain was occupied by a series of practising musicians, many in clerical or monastic orders, who published their work in the pages of several French journals: *Revue archéologique*,[17] *Revue et Gazette musicale de Paris*,[18] *Revue de la musique religieuse, populaire et classique*,[19] and *Journal des Savants*. Since all these journals were published frequently (weekly, monthly, or, at the longest interval, every six months), the exchange of views between interested parties could be (and often was) feverish and vehement.[20]

In these years, the focus of public debate became the discovery and identity of an authentic copy of the antiphoner of Gregory the Great. That glory had been asserted for the Cantatorium of Sankt Gallen (now CSG 359) by the music historian Kiesewetter in

work, see Cuthbert Johnson, *Prosper Guéranger (1805–1875): A Liturgical Theologian* (Rome: Pontificio Ateneo S. Anselmo, 1984).

[16] Work at Solesmes on the notation of medieval manuscripts did not begin until after 1856, the year of Dom Paul Jausions's monastic profession: see Leclerq, 'Notation neumatique', 1655, and Dom Pierre Combe, *Histoire de la restauration du chant grégorien d'après des documents inédits. Solesmes et l'édition Vaticane* (Solesmes: Abbaye de Solesmes, 1969), 29ff.

[17] Including Nisard's five-part 'Études sur les anciennes notations musicales' (see n. 10 above). See also the unsigned notice under 'Découvertes et nouvelles', *Revue archéologique* 8 (Oct. 1851–March 1852), 520, on Nisard's work on Montpellier H.159. Combarieu and later Leclerq refer to three articles by Nisard in the *Revue du monde catholique* for 1847, but this *Revue* was first published in 1861; from their comments it seems clear that it is the series in the *Revue archéologique* that is intended. The fault seems to have been Nisard's own, since it was he who first referred to the *Revue du monde catholique*.

[18] Including, for example, François-Joseph Fétis, 'Sur la notation musicale dont s'est servi Grégoire le Grand pour le chant de son antiphonaire', *Revue et gazette musicale de Paris*, 11/24–6 (16, 23, 30 June 1844), 205–7, 213–16, 221–3.

[19] This journal was founded by Danjou, with Fétis as his main supporter: see Robert Wangermée, 'Avant Solesmes. Les essais de rénovation du chant grégorien en France au XIXᵉ siècle', in Christine Ballman and Valérie Dufour (eds.), *'La la la ... Maistre Henri': Mélanges offerts à Henri Vanhulst* (Turnhout: Brepols, 2009), 407–14, at 409. During the first year of publication it included François-Joseph Fétis: 'Préface historique d'une dissertation inédite sur les notations musicales du Moyen Age, et particulièrement sur celle de la prose de Montpellier', *RMP* 1/7 (July 1845), 266–79, and thereafter, during its four years of publication (1845–48) many articles on manuscript sources of chant and music theory, by both Fétis and Danjou. In August 1947, the *Revue* published a letter (dated 7 August 1847: *Revue* 3, 255–6) from Fétis, defending himself against the unsubstantiated criticisms of Nisard; an answer from Nisard appeared in the *Revue* of December 1947 (dated 12 December 1847: *Revue* 3, 380), speaking vigorously against the calumnies of Fétis. This was only one of many unhappy exchanges involving Nisard and other scholars working on early notations and chant.

[20] See Combarieu, 'Essai'; Leclerq, 'Notation neumatique'; and Marie-Noël Colette, 'Fac-similés de chant grégorien au XIXᵉ s. La copie du tonaire de Dijon par Théodore Nisard (1851)', in *The Past in the Present: Papers Read at the IMS Intercongressional Symposium and the 10th Meeting of the Cantus Planus, Budapest and Visegrád 2000*, 2 vols. (Budapest: Hungarian Academy of Sciences Institute for Musicology, 2003), II, 389–421, at 390.

1828,[21] and by the Stiftsbibliothekar of Sankt Gallen, Ildefons von Arx, in his edition of Ekkehard's *Casus sancti Galli* published in 1829.[22] Reading Ekkehard's story of two monks, Petrus and Romanus, sent from Rome to teach chant,[23] von Arx directly associated this manuscript 'on the ground of many indications' with the book Petrus had brought from Rome to Sankt Gallen.[24] But this cantatorium did not contain all the Proper chants of the mass, nor was it notated in notes that could easily be read and transcribed. Hence the clamour of Félix Danjou's announcement in December 1847 of his discovery in Montpellier of a manuscript notated in both neumes *and* alphabetic notation:[25] 'il contient la plus ancienne et la plus précieuse version connue du chant ecclésiastique, et, par conséquent, la plus utile à consulter pour le rétablissement de ce chant dans sa pureté primitive'.[26] Since Danjou claimed for this manuscript a date in the early ninth century and total authenticity of its relation to Pope Gregory, this was a significant discovery.[27] In 1851 Théodore Nisard was charged by the minister for public instruction to make a copy of the Montpellier manuscript for the Bibliothèque impériale,[28] and in the same year a Parisian publisher issued the

[21] See [Raphaël Georg Kiesewetter], 'Berichtigung eines in den Geschichten der Musik fortgepflanzten Irrthumes die Tonschrift des Papstes Gregors des Grossen betreffend', *Allgemeine musikalische Zeitung* 30 (1828), 400–6, 417–23, 433–40, at 405, where he reports on Joseph Sonnleithner's discovery of the manuscript at Sankt Gallen; these are unsigned articles, but his authorship is declared in his *Geschichte . . . unserer heutigen Musik*, 5.

[22] In *Scriptores rerum Sangallensium. Annales, chronica et historiae aevi Carolini*, ed. Georg Heinrich Pertz, MGH SS *Scriptores in folio* 2 (Hanover: Hahn, 1829), 102 n. 50; the *Ad te levavi* page of the manuscript (p. 25) is reproduced in lithographic facsimile in Plate VI.

[23] On Ekkehard's musical stories, see, most recently, Lori Kruckenberg, 'Ekkehard's Use of Musical Detail in the *Casus sancti Galli*', in Judith A. Peraino (ed.), *Medieval Music in Practice: Studies in Honor of Richard Crocker* (Middleton, WI: American Institute of Musicology, 2013), 23–57; and on the Petrus and Romanus story specifically, Susan Rankin, 'Ways of Telling Stories', in Graeme M. Boone (ed.), *Essays on Medieval Music in Honor of David G. Hughes*, Isham Library Papers 4 (Cambridge, MA: Harvard University Press, 1995), 371–94.

[24] Ildefons von Arx, in *Scriptores rerum Sangallensium*, 102 n. 50: 'Quod in armario codicum sub n.359 habetur, est, ut ex multis indiciis patet, illud ipsum antiphonarium'.

[25] Jean-Louis-Félix Danjou, 'Découverte d'un exemplaire complet et authentique de l'antiphonaire Grégorien', *RMP* 3/12 (December 1847), 385–397, where he dated the manuscript in the first half of the ninth century (p. 386), and then (p. 395) at the beginning of the ninth century. It is now Montpellier, Bibliothèque Universitaire de Médecine H.159; published in facsimile as *Antiphonarium tonale missarum, XIe siècle, Codex H 159 de l'École de Médecine de Montpellier*, PM 7–8 (Solesmes: Abbaye Saint-Pierre, 1901–5).

[26] 'this contains the oldest and most precious extant version of the ecclesiastical chant, and, therefore, the most useful [version] to be studied in order to re-establish this chant in its primitive purity'. Danjou, 'Découverte', 397.

[27] Wangermée notes 'Danjou a informé de sa découverte toutes les autorités ecclésiastiques, jusqu'au pape lui-même': see his 'Avant Solesmes', 410.

[28] It had been intended by Danjou that a facsimile supported by subscription would be issued through the *Revue de la musique religieuse:* requests for subscriptions were solicited immediately after the announcement *(Revue de la musique religieuse* 3/12, 398–9 and 4/1, 28–9). Danjou was by no means a friend of Nisard (or vice versa), but he had lost influence through his support of the revolutionary side in 1848, and gave up his research (see Wangermée, 'Avant Solesmes', 411). Meanwhile Nisard knew the importance of the Montpellier book (he had called for the availability of collections of historical documents, such as those available to scholars

Antiphonaire de Saint Grégoire: Facsimilé du manuscrit de Saint-Gall (VIIIe siècle), a lithographic facsimile of CSG 359, copied by the Jesuit monk Louis Lambillotte.[29] Later it became clear that the manuscript in question was neither a copy of Pope Gregory's antiphoner, nor made in the eighth century.[30] No matter: in a situation in which uncovering an early medieval manuscript of Gregorian chant produced great excitement, the Sankt Gallen cantatorium had enough appeal to lead to the reprinting of Lambillotte's hand-copied facsimile in Brussels in 1867.[31]

As a church musician and composer (as well as Jesuit), Louis Lambillotte was primarily concerned with improving the quality of church music, and to this end, the restoration of Gregorian chant: it was only in support of this that he encountered historical questions, and in these matters he would quickly show his inexperience. In a long historical introduction to the facsimile of CSG 359, Lambillotte explained that the first chants of the Christian church had come from the mouth of Christ, and 'quand elles commencèrent à s'altérer, Saint Grégoire fut envoyé de Dieu pour les ramener à leur pureté native'.[32] He, like many of his compatriots, knew that time had again led to change, both in the melodies sung and in the manner of their singing, hence the need for restoration.[33]

Lambillotte's biographer treats him as the demanding and courageous hero in a battle to conquer Gregorian melody, determined to force old witnesses to deliver up their lost secrets.[34] The contrast between his determined but ingenuous mission and Coussemaker's more careful evaluations, writing the history of music (in his eyes dominated by French endeavour),[35] could hardly be greater. But the ground on which they came together was the study of manuscript sources. 'En publiant le célèbre antiphonaire de Saint-Gall, nous ne pouvons nous dispenser de dire quelques mots de son importance et de son irréfragable

in other disciplines), and somehow managed to find a way to make the content of the manuscript more available. On his work copying this manuscript, see esp. Colette, 'Fac-similés de chant grégorien'; she reports his mission as set out in a letter of 1.12.1850. In the *Revue archéologique* for October 1851–March 1852 (8, 520) it was announced that Nisard's 'mission d'archéologie musicale' had been completed 'avec une patience et une perfection qui rappellent les grands travaux des Bénédictins', and that the result was deposited for consultation at the BNF; it is now BNF lat. 8881.

[29] *Antiphonaire de Saint Grégoire*, ed. Louis Lambillotte (Paris: Poussielgue-Rusand, 1951).

[30] Published in facsimile as *Cantatorium, IXe siècle, No 359 de la Bibliothèque de St Gall*, PM 2e sér. 2 (Tournai: Desclée, 1924); now available in digitized form on the CESG website.

[31] On the quality of Nisard's copying, compared to Lambillotte's, which she describes as 'infiniment plus soignée', see Colette, 'Fac-similés de chant grégorien', 409.

[32] 'when they [the melodies] began to change, St Gregory was sent by God to bring them back to their original purity'. Lambillotte, *Antiphonaire*, 9.

[33] See Mathieu de Monter, *Lambillotte et ses frères* (Paris: Nouvelle maison Perisse frères de Paris, 1871), esp. Ch V: 'Le restaurateur du chant grégorien'.

[34] *Ibid.*, 109: 'De son poudreux inventaire, un secret pressentiment lui disait qu'allait sortir le chant antique dans sa fraîcheur primitive. S'enfonçant résolument dans les siècles écoulés il demandait à ces grands révélateurs de lui donner des témoins, de lui livrer leurs secrets inespérés; et il marchait ainsi à la conquête de la mélodie grégorienne, le front levé vers les collines et les yeux attachés au groupe vénéré des maîtres des âges de foi.'

[35] Coussemaker, *Harmonie*, Préface, xii.

authenticité':[36] the opening words of Lambillotte's facsimile had re-asserted the relation of this manuscript to something created by Pope Gregory. Even if, already in 1851, other scholars were able to use scientific reasoning to refute the claimed date and origin of the Sankt Gallen cantatorium,[37] its interest as a historical document had hardly waned. Concurrently, Coussemaker, born into a family of lawyers and supported through much of his life through his legal practice, wrote in the preface to his 1852 study 'l'historien a besoin de s'appuyer sur des faits précis, sur des documents authentiques'.[38] In mid-nineteenth-century France knowledge of and interest in the authenticity of documentary historical sources was at its height: this was a post-revolutionary society, in which the history of property rights had become a significant problem, and the founding of the École des Chartes in 1821 had as its fundamental aim the training of young scholars so that they would be 'capable of organizing the documents that had been collected as a result of revolutionary confiscations and thus to rewrite national history'.[39]

This was not all that was achieved: those historical techniques and attitudes that were being developed to support writing the history of France rippled outwards: no less a figure than Champollion-Figeac, elder brother of the reader of hieroglyphs, was not only curator at the Bibliothèque impériale (later 'nationale') but also a teacher of Palaeography at the École des Chartes.[40] Even if there was no individual with responsibility for musical study appointed at either the École des Chartes or the École Pratique des Hautes Études (founded in 1868), much of the systematic approach to the study of manuscripts as sources for texts or for historical data communicated itself easily. In parallel, the immense collections of manuscripts now held in French public libraries provided a rich foundation for the study of medieval culture: fast developing knowledge of actual surviving manuscripts,[41] eventually

[36] 'In publishing the celebrated antiphoner of Sankt Gallen, we cannot refrain from saying some words about its importance and its unquestionable authenticity.' Lambillotte, *Antiphonaire*, 5.

[37] Félix Raillard, *Explication des neumes ou anciens signes de notation musicale pour servir à la restauration complète du chant grégorien* (Paris: Repos, 1852), 90; Anselm Schubiger, *Die Sängerschule St. Gallens vom 8. bis 12. Jahrhundert* (Einsiedeln and New York: Karl und Nikolaus Benziger, 1858), 78 n. 6.

[38] 'The historian must rely on precise facts, on authentic documents.' Coussemaker, *Harmonie*, viii; for information about Coussemaker's legal career, see Leclerq, 'Notation neumatique'.

[39] www.portahistorica.eu/organisation/members/ecole-national-des-chartes; on the early history of the École, see Maurice Prou (ed.), *Livre du centenaire (1821–1921)* 1: *L'École. Son histoire – son œuvre* (Paris: A. Picard, 1921).

[40] See his *Paléographie des classiques latins d'après les plus beaux manuscrits de la Bibliothèque Royale de Paris*, ed. Aimé Louis Champollion-Figeac with introduction by M. [Jean-Jacques] Champollion-Figeac (Paris: Panckoucke, 1839); his courses for the École are listed in the *Livre du Centenaire*, from 1830 to 1848 (cclxxix–cclxxx).

[41] Many now began to make *voyages littéraires* following the model of Mabillon: as an example of the considerable interest in medieval manuscript sources, and the way in which information about these materials was now being circulated, see the first volume (published in 1820) of the *Archiv der Gesellschaft für ältere deutsche Geschichtskunde zur Beförderung einer Gesamtausgabe der Quellenschriften deutscher Geschichten des Mittelalters* [forerunner of the *Neues Archiv*]. In this one issue there were substantial reports on manuscripts in Dresden, Paris, Vienna, Frankfurt am Main, Fulda and Hanover, and on manuscripts that had once belonged to St Emmeram in Regensburg.

rendered widely available through publication of library catalogues,[42] revolutionized the knowledge base. The energies generated by Abbé Guéranger and the 'mouvement liturgique' for historical study in order to improve ritual had had spiritual and pastoral aims: now the study of liturgy as an aspect of history emerged strongly in scholarly circles. Louis Duchesne, director of the École Française de Rome, published his *Origines du culte chrétien: étude sur la liturgie latine avant Charlemagne* in 1889.[43] But for the study of medieval liturgical manuscripts, the work of the great Chartiste and cataloguer of manuscripts at the Bibliothèque nationale, Léopold Delisle, must be considered the most outstanding of its time: his 'Mémoire sur d'anciens sacramentaires' of 1886, 367 pages long and with entries for 127 sacramentaries – beginning with a seventh-century book in the Biblioteca capitolare at Verona (LXXXVIII) and continuing with the Gelasian Reginensis 316 – remains a valuable guide to early medieval liturgical books.[44]

From the mid-century on, study of neumatic notations became more detailed and precise: the comparison of melodies written in neumes with those written on staves had by now allowed much more access to the nature of neumes, and it was appreciated that the information they could bring to bear on the work of restoration was not only to do with pitch patterns but also with other philological aspects (how many notes, and the division of note groups between individual syllables) and delivery in performance.[45] The task of studying manuscripts of Gregorian chant more widely was now largely undertaken (in the Francophone world) by monks of Solesmes, whose recorded travels got under way in the 1860s.[46] Although, in the first place, those missions were carried out as a way of gathering musical texts, and thus to support the establishment and eventual publication of chant books for everyday use, it was widely understood that unravelling the meanings of neumatic notations was critical to the success of the venture. Unlike the letters, words and phrases of Latin texts studied by palaeographers, these neumatic notations carried several layers of information beyond

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[42] Already in 1715 Montfaucon had attempted to make a short inventory of all extant manuscript collections about which he could uncover information: see Bernard de Montfaucon, *Bibliotheca bibliothecarum manuscriptorum nova*, 2 vols. (Paris: Briasson, 1739), and the remarks on it in Ludwig Traube, *Zur Paläographie*, 112–13. For French collections the two most important initiatives were the *Catalogue général des manuscrits des bibliothèques publiques de France*, begun in 1849, with seven quarto volumes produced between then and 1885; and Léopold Delisle, *Le Cabinet des manuscrits de la Bibliothèque impériale*, 4 vols. (Paris: Imprimerie impériale, 1868–81), including a volume of plates. On manuscript catalogues for other countries, see Traube, *Zur Paläographie*, 112–19.

[43] (Paris: Thorin).

[44] Léopold Delisle, 'Mémoire sur d'anciens sacramentaires', *Mémoires de l'Institut national de France* 32 (1886), 57–423.

[45] For a clear statement to this effect, see Raillard, *Explication des neumes*, especially Ch. 1, 'Ce qu'il y a à faire pour la restauration du chant de l'Église'.

[46] See n. 88 below.

the shape of the melody and the numbers of notes for each syllable:[47] by the second part of the nineteenth century, discussion of the pitch content of individual melodies was accompanied by debates about the rhythmic content of neumatic notations and the implications for articulation of different neume graphs for similar pitch patterns.

Yet the most decisive step for the study of manuscripts and of palaeography writ large was not simply direct access to manuscripts but the invention of new methods of reproducing photographs that would allow the wide circulation of more accurate images to those who did not have the time or the resources for travelling. Between 1884 and 1892, Émile Chatelain, once a student of and then successor to Champollion-Figeac as professor of classical philology at the École Pratique des Hautes Études,[48] published 105 plates in his *Paléographie des classiques latins*, images collected during ten years of travel.[49] This was far from being the first major palaeographical collection that would use photography to allow comparison of texts and of scripts, but it was one of the first well-circulated collections to use 'héliogravure', a photographic process which, because of its high quality and richness, was most suited to the reproduction of late antique and medieval manuscripts.[50] Lauded by Delisle as 'opening new paths for the study of palaeography',[51] this was the process used in his own *Album paléographique, ou recueil de documents importants relatifs à l'histoire et à la littérature nationales*, published in 1887.[52]

It was Delisle's *Album paléographique* that acted as a model for a new quarterly publication named *Paléographie musicale*, of which the first numbers appeared in 1889.[53] This not only

[47] On this difference between palaeography and musical palaeography, see Ewald Jammers, 'Grundsätzliche Vorbemerkungen zur Erforschung der rhythmischen Neumenschriften', *EL* 58 (1944), 97–114, at 101.

[48] Muzerelle points out that Chatelain had held the Chair of Palaeography at the EPHE since the foundation of the school, and then 'annexed' the Chair of Latin Philology: see Denis Muzerelle, 'Une siècle de paléographie latine en France', in Armando Petrucci and Alessandro Pratesi (eds.), *Un secolo di paleografia e diplomatica (1887–1986) per il centenario dell'Instituto di Palaeografia dell'Università di Roma* (Rome: Gela, 1988), 131–58, at 135.

[49] 2 vols. (Paris: Hachette, 1884–92): Préface to volume 1. Like the collotype plates issued by the Palaeographical Society in London (*Facsimiles of Manuscripts and Inscriptions*, ed. E. A. Bond and E. M. Thompson, London: Clowes, 1873–83), Chatelain's publication was issued to subscribers. A second volume, also with 105 plates, was completed in 1900: together, the two volumes had been issued in 14 fascicles.

[50] Already in 1878, a group of professional librarians and scholars had published the monumental *Musée des archives départementales: recueil de fac-similé héliographiques de documents tirés des archives des préfectures, mairies et hospices*, under the direction of Natalis de Wailly, Léopold Delisle and Jules Quicherat (Paris: Imprimerie nationale), including 172 plates; on this and the context of its publication see Muzerelle, 'Une siècle'. On the various processes used in publishing palaeographical studies in this period, see Traube, 'Das Zeitalter der Photographie', in his *Zur Paläographie*, 58ff.

[51] 'Les progrès de cet art merveilleux ont ouvert des voies nouvelles à la paléographie & à la diplomatique.' *Album paléographique*, 1.

[52] Published under the auspices of the Société de l'École des Chartes (Paris: Quantin, 1887).

[53] Volume 1 of *PM* was composed of eight quarterly issues, published between January 1889 and October 1990. On the place of *paléographie musicale* in relation to the study of palaeography see Muzerelle, 'Une siècle', 137–9.

used the same new techniques of photography and printing but also had analogous purposes.[54] Delisle had explained the need for photographic reproductions of manuscripts,

> when the text of the literary *chefs d'œuvre* of antiquity and the middle
> ages depended on them, when they are the basis of our knowledge of
> the ancient geography of a country or of the history of a distant epoch,
> when reading them is difficult and the interpretation of abbreviations is
> uncertain, when they offer features that are not easily reproduced
> typographically, and above all, when their conservation is not perfectly
> assured for a long future, or when chance has taken them far from those
> places where scholars have the greatest interest in consulting them.[55]

In this generous assessment of the many ways in which photography could aid scholarship, the goal of establishing good critical texts sits at the centre. Mocquereau's work preparing the launch of *Paléographie musicale* began in 1887, with many visits and letters exchanged with possible subscribers, discussions with scholars about how the project would be managed, and then, in 1888, a journey to Sankt Gallen to choose the manuscript that would be photographed for the first volume, and the publication of an eight-page quarto prospectus announcing the new collection of 'Fac-similés phototypiques des principaux manuscrits de chant grégorien, ambrosien, gallican, mozarabe'.[56] But the context for the series was not 'the sterile satisfaction of making a large collection' of photographs of manuscripts,[57] as if they were objects in a museum,[58] or even a catalogue of neume forms,[59] but the full restoration of the melodies of Gregorian chant.

Mocquereau's initial place in this undertaking was that of the pupil standing up for his teacher. Since the publication in 1880 of the study *Les mélodies grégoriennes d'après la tradition*,[60] and in 1883 of the edition *Liber gradualis*, both by Joseph

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[54] One of the details of design that connects the two publications is their listing of previous facsimile publications. Delisle, *Album paléographique*, 2–4, and *PM* 1, 13–17.

[55] Delisle, *Album paléographique*, 1–2: 'quand c'est sur eux que repose le texte des chefs-d'œuvre littéraires de l'antiquité & du moyen-âge, quand ils sont le fondement de nos connaissances sur la géographie ancienne d'un pays ou sur l'histoire d'une période reculée, quand la lecture en est difficile & que l'interprétation des abréviations est douteuse, quand ils offrent des particularités qui ne se prêtent pas à une reproduction typographique, et surtout quand la conservation n'en est pas parfaitement assurée pour un long avenir, ou bien que le hasard les a portés loin des lieux où les savants ont le plus d'intérêt à les consulter'. Mocquereau quoted an even longer passage in the 'Introduction générale' to the first volume of *PM*, 5–6.

[56] For the most detailed account of the tasks undertaken in preparation see Combe, *Histoire*, 119–42.

[57] Dom J. Gajard, 'La "paléographie musicale" et Dom Mocquereau', in *PM* 14, 9–59, at 22: 'Il ne s'agissait donc pas précisément pour lui de publier des manuscrits de chant, pour "la satisfaction stérile d'en faire une vaste collection".'

[58] *Ibid.*: 'comme des objets de musée'.

[59] *Ibid.*: 'un catalogue plus ou moins varié de formes neumatiques'.

[60] (Tournai: Desclée).

Pothier,[61] the abbey of Solesmes had publicly taken the lead in fighting against the privilege to publish plainchant books according to the Medicean edition of 1614–15; this right had been granted by the pope to the Bavarian publisher Friedrich Pustet of Regensburg.[62] The privilege had first been ratified in 1868, and was then repeated in April 1883, just before the appearance of Pothier's Gradual. The 'first authoritative edition of plainchant based on palaeographic research',[63] Pothier's *Liber gradualis* sought to fulfil the programme 'of restoration imagined by Dom Guéranger in the monastery's early years'.[64] But the melodies were conspicuously different from those in currently circulating editions, and the reception of Pothier's work was a mixture of acclamation[65] and attack.[66] Confronted by a maelstrom of controversy surrounding their work, the monks of Solesmes sought to demonstrate the historical solidity of Pothier's melodies and approaches to performance, now using the most up-to-date scientific methods to support their historical studies. Already the title of the *Liber gradualis* had claimed that it had been made *cum notis musicis ad majorum tramites et codicum fidem figuratis ac restitutis* ('with musical notes drawn and faithfully restored according to the paths of the chief manuscripts'). Knowing that comparison of the Solesmes edition with early chant manuscripts would take the ground from under the feet of those who supported the Regensburg edition,[67] Mocquereau argued for the supremacy of chant manuscripts over the writings of theorists in establishing critical versions of Gregorian melodies:

> Ces monuments [qui nous ont transmis les chants eux-mêmes en notes musicales traditionelles] ont … l'avantage inappréciable pour l'archéologue d'être la matière première de ses recherches. En eux-mêmes ils renferment tout ce que nous voulons savoir sur la version, sur la modalité, sur le rythme & la notation des mélodies ecclésiastiques … ils sont la traduction par l'écriture de ce que ces maîtres enseignaient &

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[61] Much of the work for the *Liber gradualis* had been achieved by Pothier working together with Dom Paul Jausions, but Jausions had died in 1870.

[62] John A. Emerson, 'Plainchant', §11 'Restoration and Reform in the 19th Century', *NG* 2, XIX, 853–7.

[63] Katherine Bergeron, *Decadent Enchantments: The Revival of Gregorian Chant at Solesmes* (Berkeley: University of California Press, 1998), 17.

[64] *Ibid.*

[65] Combe, *Histoire*, 103.

[66] On the fightback from Regensburg in favour of the Pustet books based on the Medicean edition, see Franz Xavier Haberl, 'Geschichte und Wert der offiziellen Choralbücher', *KmJb* 17 (1902), 134–92; Combe, *Histoire*, 126: 'Les deux positions s'affrontaient bruyamment'. On the difficulties between Pothier and Mocquereau, and on the complex social and commercial interactions during the struggle to control publication rights, see Katharine Ellis, *The Politics of Plainchant in* fin-de-siècle *France*, Royal Musical Association Monographs 20 (Farnham: Ashgate, 2013).

[67] See Dom André Mocquereau, 'La pensée pontificale et la restauration grégorienne', *RG* 6 (1921), 9–18, at 9, reproduced in Combe, *Histoire*, 126.

exécutaient, & partant [*sic*], pour qui sait lire & comprendre cette écriture,
l'expression la plus parfaite des cantilènes liturgiques.[68]

In the prospectus for *Paléographie musicale* issued in 1888,[69] Mocquereau had used the subtitle 'Les mélodies liturgiques', in an obvious allusion to Pothier's *Les mélodies grégoriennes*. But by the time the first issue appeared, this subtitle had given way to 'Les principaux manuscrits de chant'. This, and the substantial study of neumatic notations included in this first volume under the heading 'Origine et classement des différentes écritures neumatiques' underlined Mocquereau's firm intention to provide the Solesmes work on restoration with an unshakeable historical foundation, using palaeographical methods to read neumatic notations and the photographic techniques lately demonstrated to be commercially viable to make the Solesmes investigations widely available.[70]

2.2 1889–1952: FROM MONASTERY TO ACADEMY

With the advent of the new facsimile series, music palaeography had come of age: it was now possible to argue that principles of historical method had been developed, and that the study of neumatic notations was being conducted in a systematic manner. Moreover, palaeographical enquiries about neumatic notations were now based on direct knowledge of a range of manuscript sources. Writing in 1898, the French musicologist Jules Combarieu could contrast the 'puérilités et scandales' that had characterized the study of neumes in the first half of the century with the scholarly work of the Benedictines: now 'a true musical philology' would be 'put in place'.[71] In this Combarieu directly reflected the views of Mocquereau, who by now treated the study of neumatic notations as the direct basis for

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[68] 'These monuments [which have transmitted the chants themselves to us in traditional musical notation] have . . . the inestimable advantage for the archaeologist of being the basic material for his research. They contain in themselves all that we want to know about the version, the modality, the rhythm and the notation of ecclesiastical melodies . . . they are the translation in writing of what these masters taught and executed, and convey, for whoever knows how to read and understand this writing, the most perfect expression of liturgical cantilena.' *PM* 1, 23. After this first volume, the motto 'Res, non verba' was printed on the title page of every volume.

[69] See Combe, *Histoire*, 134.

[70] On Mocquereau's determination to use (and be seen to use) scientific methods which allowed for rational argument and therefore justifiable results (as opposed to 'fantasie', imagination), see Combe, *Histoire*, 126ff; Dom Paul Cagin and Dom André Mocquereau, *Plainchant and Solesmes* (London: Burns and Oates, 1905), 20ff; Katherine Bergeron, 'A Lifetime of Chants', in Katherine Bergeron and Philip V. Bohlman (eds.), *Disciplining Music. Musicology and its Canons* (University of Chicago Press, 1992), 182–96; her characterization of Mocquereau's methods with 'Fables were replaced by tables' (191) catches his expressed wishes precisely. For views of Mocquereau's work, both written inside the cloister, see Gajard, 'La "Paléographie musicale"', and Jean Claire, 'Dom André Mocquereau: Cinquante ans après sa mort', *EG* 19 (1980), 3–23.

[71] Combarieu, 'Essai', 119 and 174: 'la vraie philologie musicale va s'organizer'.

work on Gregorian melodies: 'la réproduction intégrale de quelques bons manuscrits de provenances & d'écritures variées peut suffire aux archéologues pour se rendre un compte exact des diverses phases de la notation musicale, &, par la, de l'état de conservation des mélodies grégoriennes à travers les siècles dans l'Occident tout entier. La notation est le canal qui nous apporte la tradition grégorienne'.[72] As in literary studies, so also in musicology: the interlocking relation between palaeography and philology ensured the centrality of the study of neumes.

Remaining true to this stance, the *Paléographie musicale* enterprise directed by Mocquereau and by his pupils after his death continued in the manner he had established until January 1955.[73] By this time studies dealing directly with neumatic notations contained in these volumes included several studies of particular script types (Lotharingian, Breton, Aquitanian, Beneventan). All the studies are unsigned, but their writers can be identified:

1 (1889–90): 'Origine et classement des différentes écritures neumatiques',[74] [André Mocquereau]

2 (1891–2): 'Étude sur les neumes-accents, i. Neumes ordinaires',[75] [Joseph Pothier] 'ii. Neumes-accents liquescents ou semi-vocaux',[76] [André Mocquereau]

4 (1893–6): 'Lettres romaniens', 'Signes romaniens',[77] [André Mocquereau]

10 (1909–12): 'Les signes rythmiques sangalliens et solesmiens. Étude comparative',[78] [André Mocquereau]; 'Aperçu sur la notation du ms. 239 de Laon',[79] [Amand Ménager]

11 (1912–14): 'Étude sur la notation du manuscrit 47 de Chartres – sa concordance avec les codices rythmiques sangalliens et messins',[80] [Amand Ménager]

13 (1925–30): 'Étude sur la notation aquitaine d'après le Graduel de Saint-Yrieix (Codex Latin 903 de la bibliothèque nationale de Paris)',[81] [Paolo Ferretti]

15 (1937–53): 'Étude sur la notation bénéventaine',[82] [Jacques Hourlier]

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[72] 'The complete reproduction of some good manuscripts of varied provenance and script-type can suffice for [musical] archaeologists to give an exact account of the diverse phases of musical notation, and, thereby, the state of preservation of Gregorian melodies through the centuries throughout the West. Notation is the channel that brings the Gregorian tradition to us.' *PM* 2–3, I, 1–2.

[73] In the first part of volume 16, dated January 1955, Dom Joseph Gajard writes about the history of the series, and about the decision now taken to separate studies (henceforth to be published in the journal *Études grégoriennes*) from facsimiles: see *PM* 16, 11–13.

[74] *PM* 1, 96–160 + Plates I–XXXI. The dates given in this list are those of the fascicles in which these volumes were first published, rather than the dates on the title pages of the eventual volumes.

[75] *PM* 2, 27–36.

[76] *PM* 2, 37–86.

[77] *PM* 4, 9–17 and 17–24.

[78] *PM* 10, 41–64.

[79] *PM* 10, 177–211.

[80] *PM* 11, 41–131.

[81] *PM* 13, 54–211.

[82] *PM* 15, 72–161.

In other words, it was the Solesmes school that first laid out the groundwork for typologies of notation. The basis for their divisions had been made clear in the prefaces to the first two volumes: first Mocquereau (for this is actually his work) distinguished between 'neumes-accents' and 'neumes-points'.[83] This was essentially a chronological distinction, moving from neumes of the Sankt Gallen type to square notes (written on lines); but Mocquereau built a layered historical hypothesis into this typology. According to this: (a) the oldest notation used for Gregorian chant was derived from grammatical accents; since all his first examples are in books from Sankt Gallen, we can safely infer that he considered these to be the clearest representatives;[84] (b) the signs actually written were not 'signs adapted by convention to the music of language', but 'figures traced in the image of oratorical melody'[85] – this was therefore an 'oratorical' or 'cheironomical' notation; (c) notation in 'point neumes' had developed from notation in 'accent neumes'; (d) 'point neumes' were derived from systems of punctuation; (e) thus, a system of signs derived from punctuation eventually achieved preference over a system derived from grammatical accents; and, finally (f) there were intermediate stages, which he named 'notations mixtes, accents et points'. Perhaps most confusing among his categorizations is that of '*points détachés*',[86] represented in its most complete development in the notations of Aquitaine and Spain; although these look quite different from notation in 'square' noteheads, his explanation of their derivation is set entirely within his underlying 'accents changing to punctuation' hypothesis. Over and above the categorization into *neumes-accents, neumes mixtes* and *neumes-points*, examples of neumatic notation were grouped, in volumes 2 and 3 of *Paléographie musicale*, into series by region ('Italian', with subgroups 'Nonantolan', '*Lombarde*'; '*notation aquitaine*'; '*neumes-accents allemands*'; '*notation messine*'; '*neumes-accents anglo-saxons*'; '*neumes-accents francais*').

Mocquereau's grand hypothesis about the origin of neumes had itself determined those ways in which he would work out the rest of the history, as subdivisions of his grand categories. What he seems not to have been aware of was the extent to which the historical hypothesis would eventually limit the ways in which different neumatic notations could be

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[83] See especially *PM* 1, 122–6, where Mocquereau's reasoning for the development of these two different notation classes and the relation between them is set out; on p. 128 a table shows the 'transition des neumes-accents aux neumes-points'. The initial conception of neume types as divided into 'accent' and 'point' neumes was Pothier's: see *Les mélodies grégoriennes*, 34.

[84] By 1925, in the work of Dom Gregorio Maria Suñol, the Sankt Gallen neumes were being described as having 'attained perfection, despite being from a remote period'; he argued that this perfection was the result of the purity of their source, none other than the Roman tradition, received directly by the abbey at an early date: *Introducció a la paleografia musical gregoriana* (Montserrat: Abadia de Montserrat, 1925), 186. Suñol, a Benedictine of Montserrat, had been in contact with the monks of Solesmes since the 1900s, and the second edition of his book, revised and translated into French, was published in 1935, with a preface by Mocquereau, as *Introduction à la paléographie musicale grégorienne* (Paris, Tournai and Rome: Desclée).

[85] *PM* 1, 97ff.

[86] *PM* 1, 138.

studied: the most obvious example of a gap in the studies published in *Paléographie musicale* while it was masterminded by Mocquereau or by his pupil and successor directing the work of the atelier de paléographie, Dom Gajard, is that of French notations. Although the monks of Solesmes must have seen more manuscripts notated in 'French neumes' than any other regional notation type, it was evidently the fixed view at Solesmes that these were 'accent neumes' – like those of Sankt Gallen – and thus required no separate study.[87] Nevertheless, the seeds of a regional typology of neumatic scripts had been sown: journeys undertaken by Solesmes monks in the following years – visiting libraries in order to discover manuscripts and then organizing photography of them – ensured that they were aware of a multiplicity of notations.[88]

Others were also aware of abundance: in an important (but very quickly superseded) study of neumes published in 1895, Oskar Fleischer lamented the lack of exploration of the fine examples of neumatic notations in the various libraries in Rome.[89] In the Vatican Library in particular, the diverse manuscript collections rendered it one of the most representative in Europe for palaeographical models.[90] This would prove to be true for neumatic notations also, as was quickly seen in the exhibition prepared by Henry Marriott Bannister for the Gregorian Congress in Rome in April 1904.[91] Bannister's work on Vatican manuscripts containing music notations was eventually written up and published as *Monumenti vaticani di paleografia musicale latina* in two large format volumes in 1913;[92] this had entries on 1065 manuscripts, and 132 plates containing facsimiles of 206 manuscripts.[93] And it was here that the possibilities of studying neumatic notations through a regional typology were first seriously explored and made visually available to a reader. Bannister had taken up Mocquereau's accents, points and mixed categories, and in 1904 divided his examples into '*neumi accenti tedeschi*', '*neumi accenti francesi*', '*notazione aquitanica*', '*notazione mista (punti e accenti)*', '*notazione di Metz*', '*notazione inglese*', '*notazione Italiana*

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[87] Eventually remedied with the publication in 1955 of *Le Manuscrit du Mont-Renaud* (introduction by Dom Jacques Froger) as *PM* 16, with a second edition published in 1989 as the *Antiphonaire du Mont Renaud* (Solesmes: P. Lang), with a new introduction by Dom Daniel Saulnier.

[88] Dom Pierre Combe sets the first of the Solesmes *voyages grégoriens* made to study manuscripts in 1866 (*Histoire*, 71); he describes other *voyages* to Switzerland in 1888 (135), to Rome in 1890 (144), to other parts of Italy (155), to Belgium and Holland in 1891 (160), to England and Italy in 1904 (332), and to Spain and Germany in 1905 (432).

[89] He describes these as 'Roms grossartige Sammlungen von Neumen-Denkmälern'. Oskar Fleischer, *Neumen-Studien. Abhandlungen über mittelalterliche Gesangs Tonschriften 1: Über Ursprung und Entzifferung der Neumen* (Leipzig: Fleischer, 1895), 11.

[90] Edward K. Rand, review of Bannister's *Monumenti, The American Journal of Philology* 35 (1914), 467–74.

[91] The catalogue of the exhibition, including four sections (I. Vite e scritti di S. Gregorio Magno, II. Sacramentarî ed antichi Messali, III. Notazione musicale, IV. Trattati di musica) was published as *Catalogo sommario della esposizione Gregoriana aperta nella Biblioteca Apostolica Vaticana dal 4 all'11 Aprile 1904*, Studi e Testi 13 (Rome: Vatican, 1904).

[92] Codices e Vaticanis selecti phototypice expressi 12 (Leipzig: Harrassowitz, 1913).

[93] Rand, review of Bannister's *Monumenti*, 467.

A. Settentrionale e Centrale B. Meridionale'. By 1913 his clarity about national groups had suffered from more exposure to Mocquereau's theories – or perhaps we should say that he had enough examples now to display the whole scheme à la Mocquereau. Now we find the following groups:

Accent-neumes: German, French and English, Italian, Visigothic
Diastematic neumes: German, French and English, Italian
Notations in points I (points and neumes mixed): Nonantolan, Lotharingian, neumes from the north-west of France and from the south-west of England ('mixed'), neumes from the south-west of France
Notations in points II (pure system): Aquitanian
Notations in points III (joined points): French, neumes from central Italy, Italian transitional neumes, Beneventan.[94]

Although less expansive, packing his words on 'the most important types of Latin neumatic scripts' into forty-seven small printed pages, Peter Wagner's account published in September 1912 was clearer, using a typology that differentiated neume types at just one level: his chapter opens with a statement that makes a parallel between the development of script in different countries and the formation of neumes, and he therefore divides neumes purely by region without reference to the Mocquereau categories.[95] Here we find 'Mozarabic neumes', 'Italian neumes', 'French neumes', 'Irish-Anglo-Saxon neumes', 'Metz neumes' and 'German neumes'. Wagner's very careful work, showing photographs of passages from named manuscripts beside transcriptions with detailed discussion of individual neumes, was a classic example of good historical method. The same approach was adopted in the new expanded French edition of Dom Suñol's *Introduction à la paléographie musicale grégorienne* published in 1935, in which six chapters (208 pages) are dedicated to 'national schools' of notation (Italian, French, Anglo-Saxon, German, Spanish Visigothic and Catalan).[96] Although prepared during many years of contact with Solesmes, and with unmeasured admiration for Dom Mocquereau (who wrote a preface for this second edition of the book before his death in 1930, and to whom it is dedicated), Suñol's study managed to

[94] There are other groups in Bannister's list: the alphabetical notations, the Daseian notation, notations on lines, square notations and measured notations; his groupings are explained in the introduction (xvii–xxx, see especially xxviii), and can be seen set out in a table on p. xvi.
[95] Wagner, *Neumenkunde*, 174: 'Die Ausbildung der Neumen in den Ländern des lateinisch-gregorianischen Ritus ist parallel mit derjenigen der Schriftzeichen verlaufen.' This was the second edition of his study, considerably altered from the first (published in 1905); the new chapters added in the second edition preceding the chapter on 'Latin neumes' (on Byzantine notations, eastern and western reading signs, and Russian and Armenian neumes) indicate the extent to which Wagner's approach to and knowledge of the earliest notations had developed in the intervening period.
[96] Chs. IX–XIV. With these should be linked his Ch. VII, 'Diffusion des Neumes', in which he makes a historical tour around Europe, starting from Rome where the 'neumes-accents' had their origin 'comme le chant qu'ils transmirent' (115).

separate from each other discussion of the chronology of development of neumes (in which he followed Mocquereau) and discussion of palaeographically distinct national schools. And on his 'Carte géographique des Notations', set at the end of the volume, it is purely geography and not chronology that is represented.[97]

That musical palaeography of this kind could prove useful in the wider field of palaeographical studies had not been lost on others: writing in 1914, the eminent classicist and pupil of Ludwig Traube, Edward Kennard Rand, observed 'Further study will doubtless confirm with new details and distinctions what is obvious at present, that neumes will be a necessary auxiliary in the rapidly growing science of regional palaeography.'[98] He even went so far as to invent 'the neumless palaeographer' who 'has only to read the introduction [to Bannister's *Monumenti*] to find what are the forms and varieties of neums in general, to identify a series of neums in the manuscript he is studying with the photographic portraits of neums in the plates'.[99]

In the identification of regional characteristics, musical palaeography remained close to the concerns of those who studied manuscript material, and who needed to determine origin and provenance. But this was far from being the dominant theme in studies of neumatic notations published during this first period in which competence in reading these notations was being exercised. Early notated manuscripts had been identified. Later manuscripts with diastematic notations that could be compared with the earlier examples had been identified. In the continuing work of restoration of the chant, in which there were by now many more participants, the most significant remaining question was what neumatic notations conveyed about the delivery of melodies, thus the reading of all those layers of information conveyed by neumes that sat beyond melodic direction. This included studies of liquescence,[100] and of the meaning of individual special neumes,[101]

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[97] Plate B.

[98] Rand, Review of Bannister's *Monumenti*, 469.

[99] *Ibid.*, 469. Other significant publications of this period with photographic reproductions of notated pages include *The Musical Notation of the Middle Ages exemplified by Facsimiles of Manuscripts written between the Tenth and Sixteenth Centuries inclusive*, ed. Henry Bremridge Briggs (London: Plainsong and Mediæval Music Society, 1890), with twenty plates; and *Introduction to the Study of Some of the Oldest Latin Musical Manuscripts in the Bodleian Library, Oxford* [Early Bodleian Music III], ed. Edward Williams Byron Nicholson (London: Novello, 1913), with seventy-one plates, including reproductions of many non-musical manuscripts into which neumes had been written at a early period.

[100] The most important of these in this period are André Mocquereau, 'Neumes-accents liquescents ou semi-vocaux', in *PM* 2 (1891), 37–86; and Heinrich Freistedt, *Die liqueszierenden Noten des gregorianischen Chorals. Ein Beitrag zur Notationskunde*, Veröffentlichungen der gregorianischen Akademie Freiburg in der Schweiz 14 (Freiburg: St Paulusdruckerei, 1929).

[101] Including, for example, Yves Delaporte, 'Une remarque sur le quilisma', *RasG* 6 (1907), 29–39; André Mocquereau, 'Étude et exécution de l'apostropha-pressus et de son équivalence "l'apposition"', *RasG* 6 (1907), 201–26, and 'Étude des strophicus', *RasG* 7 (1908), 97–126; René-Jean Hesbert, 'L'interprétation de l'*equaliter* dans les manuscrits sangalliens', *RG* 18 (1933), 161–73. One of the most impressive studies of an aspect of neumatic notation published during this period is Joseph Smits van Waesberghe, *Verklaring der letterteekens (litterae significativae) in het Gregoriaansche Neumenschrift von Sint Gallen*, Muziekgeschiedenis der middeleeuwen 2 (Tilburg: Bergmans, 1942).

but it was discussions of rhythm and articulation that overshadowed all other concerns: in the case of many who wrote about notation, the only subject they handled was rhythm, and in the case of many who wrote more widely, rhythm was an issue that could not be avoided. As Peter Wagner pointed out, this was of interest not only in a historical sense, in so far as the performance of liturgical chant in the Middle Ages was under consideration, but also for contemporary practice, since research on chant had for so long worked under the banner of restoration of the traditional chant.[102]

As Ewald Jammers would lament in 1944, in these discussions of rhythm, the idea of universality presented a very real problem.[103] Everyone concerned seems to have argued for one solution for the whole Middle Ages (and, therefore, for those interested in performing the chant, for their own time also):[104] to quote Wagner once again, 'many important and debated problems of chant research would be solved at one stroke, if we possessed an authentic knowledge of the old manner of delivery of chant'.[105] In the publications of Solesmes, there had been no question of looking to right or left: 'La figuration des signes *rhythmiques*, comme celle des signes *mélodiques*, varie avec les différentes Écoles graphiques, mais, en dépit de ces formes multiples, il est aisé de découvrir une tradition *rhythmique* primitive et universelle, qui s'affirme avec la même évidence et la même authorité que l'unité traditionelle *mélodique*.'[106] This universal tradition, it was argued, had been progressively lost during a long period of decadence.[107] In the years between 1880 and 1930, the debate had become so heated that themes of discussion were limited and polarized, largely considering the length of each note, whether they should be roughly equal, or in measured proportional relationships (with many different manners of argument and types of result).[108] Arguments were drawn from the writings of medieval theorists, from properties of the Latin language and from ways in which classical Latin was shaped by its use (metre, rhythm, cursus). By the

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[102] Wagner, 'Die Rhythmik der Neumen', *Neumenkunde*, 409–33, at 409.

[103] Jammers, 'Grundsätzliche Vorbemerkungen', esp. 98–9 and 110–11. See also his *Der gregorianische Rhythmus. Antiphonale Studien*, Sammlung musikwissenschaftlicher Abhandlungen 25 (Strasbourg: Heitz, 1937), *passim*.

[104] On the need to separate history and modern practice see Jammers, *Der gregorianische Rhythmus*, 6.

[105] Wagner, *Neumenkunde*, 352: 'viele wichtige und umstrittene Probleme der Choralwissenschaft wären mit einem Schlage gelöst, wenn wir eine authentische Kenntnis des alten Choralvortrages besäßen'.

[106] 'The form of representation of rhythmical signs, like that of melodic signs, varies according to the different schools of script, but, despite these multiple forms, it is easy to discover a primitive and universal rhythmical tradition, which asserts itself with the same evidence and the same authority as the traditional melodic unity.' Dom André Mocquereau, *Le Nombre musical grégorien ou rythmique grégorienne, théorie et pratique*, 2 vols. (Rome and Tournai: Desclée, 1908–27), I, 157. This claim was repeated many times: see, for example, Gajard, 'La "Paléographie musicale"', 50.

[107] Suñol, *Introduction à la Paléographie*, 434.

[108] For longer and shorter summaries of these discussions (written at different times) see Suñol, *Introduction à la Paléographie*, 432–79; Solange Corbin, *Die Neumen*, part 3 of *Die einstimmige Musik des Mittelalters*, Palaeographie der Musik 1 (Cologne: Arno Volk, 1977), 3.195–211; Wulf Arlt, *Aspekte der musikalischen Paläographie*, part 1 of *Die einstimmige Musik des Mittelalters*, 1.17–20.

late 1930s, much of the heat had gone out of the debate, leaving the Benedictines of Solesmes 'holding the battlefield'.[109]

It was palaeography in the true sense of the word, the study of ancient writing, that would eventually bring new life into these debates. Already in the studies of 'chartrain notation' by Amand Ménager (*PM* 11, published 1909–12) and of 'aquitanian notation' by Paulo Ferretti (*PM* 13, published 1925–30), it was possible to see clearly laid out schemes of 'normal neumes' and 'rhythmic neumes':[110] each made comparative tables of neumes showing different sets of signs for the same melodic pattern. Ménager's table had six columns, showing neumes from Sankt Gallen, Laon BM 239 and Chartres BM 47 in each of his two categories. Ferretti's table had four columns, showing Aquitanian neumes beside those of Chartres 47 for each of the two categories. At this time, however, the idea of concordance between manuscripts reigned supreme: were one manuscript to provide less detailed information than another (or some kind of difference), it would simply be set aside as 'inferior'.[111] With this let-out clause, it was possible to argue that 'through the study just made', 'perfect rhythmic concordance between the three schools of Sankt Gallen, Laon and Chartres' had been demonstrated.[112] But by 1952, in one of the first published studies by Dom Eugène Cardine,[113] the comparative method was being used to expose sameness *and* difference. Here neumatic notations for the same melodic passages from manuscripts 'of the same school' and from different schools were set together, and it was consciously allowed that they might differ.[114] Their comparison was then used as a tool to determine the meaning of different ways of writing melodic groups. The affirmation of universal concordance had not entirely disappeared, but it had quietly moved into the background, in favour of a more disciplined attention to the individual signs in individual manuscripts. It was certainly for attention to the work of individual scribes and separate parts of manuscripts that Jammers called when he wrote in 1944 'with each alteration of form, with each new scribe, yes perhaps everywhere where a new model

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[109] Jammers, *Der gregorianische Rhythmus*, 6. For a useful account of this field of study see David Hiley, 'Notation, §III, 1: Western, Plainchant', *NG* 1, XIII, 351–4.

[110] A prelude to Ménager's work on what was known at Solesmes as 'notation chartraine' is Dom Gabriel Beyssac, 'Une troisième notation rythmique', *RG* 1 (1911), 16–19.

[111] This was a standard description: see Mocquereau, *Le Nombre musical*, 157; Ménager, 'L'Étude', 77.

[112] *Ibid.*, 131.

[113] 'Signification de la désagrégation terminale', *RG* 31 (1952), 55–65. Cardine's intervention followed and reacted to another on 'désagrégation': see Luigi Agustoni, 'Notation neumatique et interprétation', *RG* 30 (1951), 173–90, 223–30; and 31 (1952), 15–26.

[114] Cardine, 'Signification', 61: 'Assurément il ne faut pas croire que tous les cas rencontrés se présentent à nous d'une façon aussi tranchée, soit dans la concordance, soit dans la divergence … Mais quand nous rencontrons des exemples où non seulement les écoles de notation mais encore leur meilleurs témoins, se divisent entre eux et utilisent, comme en désordre, l'une et l'autre de ces graphies, c'est que nous touchons là aux frontières communes des deux phénomènes musicaux.'

intervened, [the] form and the meaning of the signs, the writing system, and even the rhythmic system can be changed'.[115]

Besides different types of neumatic scripts, and the interpretation of the signs themselves, a third central theme in the study of neumatic notations during this period was the origins of neumatic notation: from which conceptual and graphic bases neumes had been drawn, against which historical contexts their origins could be set, and what the answers to these questions would mean for reading them. Although explorations of the origin of neumes were seldom propounded directly alongside theories of rhythm, the entwined relation between the two was certainly understood by some, including Jean-Baptiste Thibaut, Peter Wagner and Dom Gregoire Suñol;[116] many of the arguments adduced about rhythm depended on the relation of Gregorian melody to Latin texts, a line along which ideas about origin were also channelled. As with theories about rhythm, there were two main directions of thought, but the ways in which arguments were subsequently shaped in each camp could follow quite different paths and arrive in rather different places. The most widely held views were built on Coussemaker's proposal about accents, set out in 1852; this had been taken up by Anselm Schubiger in 1858, Hugo Riemann in 1878, Pothier in 1880, Bohn in 1887 and Mocquereau in 1889.[117] Thus writers both monastic and lay, French and German, accepted this hypothesis. Coussemaker had made but a simple proposal, associating three accents (aigu/arsis, grave/thesis, circonflexe-combinaison de l'arsis et de la thésis) with neumes. Pothier explained in his *Mélodies* how extended neume forms could have been generated from these basic signs.[118] Then, in Mocquereau's hands, Coussemaker's simple graphically based association of accents with neumes became the basis for an extensive epistemology: accents are considered as gestures representing (or the traces of) a 'mélodie oratoire'; as a 'notation oratoire' made in the proportions

[115] Jammers, 'Grundsätzliche Vorbemerkungen', 110–11: 'bei jeder Veränderung der Form, bei jedem neuen Schreiber, ja vielleicht überall dort, wo eine neue Vorlage einsetzt, Form und Sinn der Zeichen, Schriftsystem, ja das rhythmische System sich ändern kann'.

[116] Jean-Baptiste Thibaut, *Origine Byzantine de la notation neumatique de l'église latine* (Paris: Picard, 1907), 9, whose premise for writing a book about an entirely new theory of origins was that it would not be possible to make any progress in understanding the rhythm of Gregorian chant without discovering more about the origins of neumatic notations. Wagner, *Neumenkunde*, Ch. XVI: 'Die Rhythmik der Neumen. Historische Teil', and 'Systematischer Teil', 353–407, 381–408; Suñol, *Introduction à la Paléographie*, 9.

[117] Schubiger, *Die Sängerschule*, 6 (although presented here as probable rather than definite); Riemann, *Studien*, 112 (also saying 'not unprobable'); Pothier, *Les melodies grégoriennes*, 34ff; Peter Bohn, 'Das liturgische Rezitativ und dessen Bezeichnung in den liturgischen Bücher des Mittelalters', *Monatshefte für Musikgeschichte* 19 (1887), 29–36, 45–52, 61–8, 78–80; Mocquereau, *PM* 1, 97.

[118] Pothier, *Les mélodies grégoriennes*, 41ff. The 'elaboration' of Coussemaker's basic ideas – explaining the creation of extended neume forms – in Peter Bohn, 'Das liturgische Rezitativ' is directly based on the work of Pothier, whose work is cited by Bohn, despite Treitler's attribution of this development of the accent theory to him: Leo Treitler, 'Reading and Singing: On the Genesis of Occidental Music Writing', *EMH* 4 (1984), 135–208, rep. with a new introduction and postscript in *idem*, *With Voice and Pen. Coming to Know Medieval Song and How It was Made* (Oxford University Press, 2003), 365–428, at 405–6.

required by writing, accents 'instinctively obey the same interior force that directs the hand of the orator'; this kind of writing is therefore 'cheironomic'.[119] It was not possible to consider the grammatical accents in relation to fully developed liturgical music; rather, such accents became associated with the graphic representation of music at an early stage in the development of liturgical chant, when it was melodically very simple – that is, in psalmody 'at its origin', a way of singing that was 'not far from oratorical delivery'.[120]

Imaginative and well thought out as it was, Mocquereau's scheme represented a virtual history of liturgical chant as well as ways of writing it on parchment: almost nothing in the whole scheme could be validated through surviving historical documents. In contrast, the German musicologists Oskar Fleischer (writing in 1895)[121] and Peter Wagner (writing in 1895[122] and 1912[123]) took the idea of accents as the basis for neumatic notations well under their wings, but also attempted to broaden the historical basis for consideration of these signs. Fleischer set off on what was practically an international tour, drawing in Indians, Chinese, and Japanese, before reaching the Greeks and Romans (and then Armenians); against this background he was able to explain cheironomy as a universal human behaviour. Then, with a careful reading of Greek and Latin texts, he could place the Roman use of accents derived from Greek prosodic signs at least as early as the second century CE, and the change in the use of accents to become musical signs in the early Middle Ages.[124] Wagner's route through the material was less ethnographic and more historical: he considered 'oriental reading signs' (ekphonetic notation), Byzantine neumes, and Russian and Armenian neumes, all in their own terms. While he could not connect Western neumatic notations directly to any of these systems, he nevertheless surmised that 'Latin neumes' must derive from Eastern forms of writing, even if it was unclear at what stage they had been taken up in the Roman church.[125] What is perhaps more interesting about his writing on origins is his examination of surviving manuscripts (of which he was aware) in the light of historical circumstances (above all, those church leaders known to have been concerned with the codification of liturgy): through this he implied that the origins of neumatic scripts needed a wider consideration than examination of graphic forms and parallels to these in other ways of writing musical signs. Although not noticed by many later writers, this was an important step forward. It is also in Wagner's work that the first palaeographically critical work on the

[119] *PM* I, 97–100.

[120] *PM* I, 103.

[121] Fleischer, *Neumen-Studien* I, 76–81.

[122] Peter Wagner, *Einführung in die Gregorianische Melodien* (Freiburg in der Schweiz: B. Veith, 1895), 95ff. At this stage Wagner did not consider other notations.

[123] *Neumenkunde*, 17–20.

[124] Fleischer, *Neumen-Studien* I, chs. IV (49–55), V (56–64), VI (65–8) and VIII (76–81); with, at 79: 'Hieraus ersieht man deutlich, dass das frühe lateinische Mittelalter die Accente schon nicht mehr als blosse sprachliche Elemente, sondern bereits als musikalische Schriftzeichen auffasste.'

[125] Wagner, *Neumenkunde*, 95–7.

dates of neumatic notations can be found. First he established that music books without notation (the Monza cantatorium and Rheinau Gradual) were used in the same period as books with music notation.[126] Then, using Gevaert's proposal of the eighth century (or the end of the seventh century) as the period of invention of neumes as a springboard,[127] he examined Fleischer's proposal that the Codex Amiatinus was the first extant Western neumed manuscript.[128] Noting that the neumes must be later additions (associated with a later, emending, text hand), Wagner re-assigned the notations from the eighth to the eleventh century.[129] Then, taking account of Bannister's Vatican *Monumenti* as well as some of the images of BNF lat. 1154 first published by Coussemaker, he dated the notations of this St Martial manuscript in the ninth century – a date later confirmed by Bernhard Bischoff.[130]

A second direction of enquiry into neumatic origins also considered text accents as the starting point for the neumes of Latin chant, but in this case, started from Greek prosodic accents, rather than their Latin derivatives. Thus, in order to reach 'Latin neumes', this hypothesis took a completely different route from the (Latin) accent theory. A hint of these ideas had emerged in 1878 when Riemann suggested that 'as with so much else, the Roman church had perhaps taken over the beginnings of [neumatic notation] from the Greeks'.[131] By 1907, this somewhat fanciful notion had grown into a fully fledged hypothesis, meriting a full monograph. In Thibaut's study the Greek system of prosodic accents was the basis of Byzantine ekphonetic notation, used to mark up the texts of liturgical readings; and this notation in turn gave rise to a whole host of other notation systems – Hebraic, Armenian, Georgian, Syriac and eventually Roman.[132] Yet, as the study of palaeobyzantine notations progressed, the ekphonetic hypothesis quickly lost ground: by 1935, the idea that Latin neumes were ultimately derived from old Byzantine signs and systems of notation had been so completely diluted that Carsten Høeg would merely allow a possibility of lateral influence without acknowledging an original

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[126] *Ibid.*, 100. Monza Tesoro del Duomo 88; Zurich Zentralbibliothek Rheinau 30.

[127] François-Auguste Gevaert, *Histoire et théorie de la musique de l'antiquité* (Ghent: Annoot-Braeckman, 1875–81), Book II (in vol. I), 438; *idem, Les origines du chant liturgique de l'Église latine, étude d'histoire musicale* (Ghent: Hoste, 1890), 41ff.

[128] Florence, Biblioteca Medicea-Laurenziana, Amiatino 1.

[129] Wagner, *Neumenkunde*, 102–3, n. 1.

[130] See *BK* III, no. 4006; the date 's.ix ex' was already suggested by Bischoff in 'Gottschalk's Lied für den Reichenauer Freund', in Hans Robert Jauss and Dieter Schaller (eds.), *Medium aevum vivum: Festschrift für Walther Bulst* (Heidelberg: Winter, 1960), 61–8.

[131] 'Vielleicht hat die römische Kirche die Anfänge dieser Tonschrift wie so manches andere von der griechischen überkommen.' [*sic*] Hugo Riemann, *Studien zur Geschichte der Notenschrift* (Leipzig: Breitkopf & Härtel, 1878), 112.

[132] Thibaut, *Origine Byzantine*: for a summary see his closing pages, 99–101. See also Jean-Baptiste Thibaut, *Monuments de la notation ekphonétique et neumatique de l'église latine* (St Petersburg: Kügelgen, Glitsch, 1912).

parentage.[133] A later flowering of the idea that Latin neumes depended on Byzantine models has largely been considered flawed in its methodology.[134]

An odd offshoot of both the accent and the ekphonetic theories links neumes with systems of punctuation. When it was first proposed by Peter Bohn in 1887, this hypothesis depended on a late medieval source that explained the Carthusian system of *positurae* as they were used to indicate types of liturgical recitation.[135] But, already in 1912, Peter Wagner was extremely wary of the association of punctuation signs and neumes;[136] and no one since has been able to show a direct graphic relation between the two.[137]

Finally, in the period before the Second World War, one last publication – by a new voice in the arena of neumatic studies – brought together all three of the themes set out above: the idea and development of regional neumatic scripts, the rhythmic meaning of individual neumes and the theories of origin. In his 'Zur Entwicklung der Neumenschrift im Karolingerreich', published in 1936, Ewald Jammers wrote the first of many studies of neumatic notations.[138] Jammers's theory connecting one kind of notation with the Gallican liturgy and another with the Roman liturgy (emerging here for the first time, and more fully worked out in 1953)[139] depended on close observation of the ways in which neumes were used in, on the one hand, Aquitanian notations and, on the other, Sankt Gallen, Italian and Anglo-Saxon notations. However far-fetched the conclusion (and, indeed, some of the arguments), the method of getting there recognized the need to examine and to juxtapose neumatic notations in specific early manuscripts. Above all, the study opens and closes with reference to the development and diffusion of Caroline minuscule, and has as its starting point the view that neumes written in the form in which we first encounter them in extant manuscripts (as opposed to any imagined older forms) also emerged in the

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[133] Carsten Høeg, *La notation ekphonétique*, Monumenta musicae byzantinae subsidia I/2 (Copenhagen: Levin & Munksgaard, 1935), 148: 'il est possible que les tendances des Occidentaux à rendre la notation plus riches soient dues, elles aussi, à l'exemple byzantin'. A link was again proposed by Eric Werner, *The Sacred Bridge* (New York: Columbia University Press, 1959), 103–10; but see Leo Treitler, 'The Early History of Music Writing in the West', *JAMS* 35 (1982), 237–79; rep. with a new introduction in *With Voice and Pen*, 317–64, at 363–4. For the most recent statement against an association of Byzantine ekphonetic signs and Latin neumes, see Gudrun Engberg, 'Ekphonetic [Lectionary] Notation', *NG* 2, VIII, 47–51.

[134] Constantin Floros, *Universale Neumenkunde*, 3 vols. (Kassel-Wilhelmshöhe: Bärenreiter, 1970); revised and translated by Neil Moran as *The Origins of Western Notation* (Frankfurt: Peter Lang, 2011); but see Michel Huglo, review in *Revue de Musicologie* 58 (1972), 109–12; and Max Haas, 'Probleme einer "Universale Neumenkunde"', *Forum musicologicum* 1 (1975), 305–22.

[135] Bohn, 'Das liturgische Rezitativ', esp. 45–52.

[136] Wagner, *Neumenkunde*, 82–94, esp. 82.

[137] Except in the case of the two graphs for the *quilisma*, directly related to the two forms of question mark: for a brief statement see Bernhard Bischoff, *Paläographie des römischen Altertums und des abendländischen Mittelalters* (2nd rev. edn, Berlin: Erich Schmidt, 1986), 197, 225.

[138] Ewald Jammers, 'Zur Entwicklung der Neumenschrift im Karolingerreich', in *Otto Glauning zum 60. Geburtstag. Festgabe aus Wissenschaft und Bibliothek* (Leipzig: Hadl, 1936), 89–98; rep. in idem, *Schrift Ordnung Gestalt*, 25–34.

[139] In 'Die palaeofraenkische Neumenschrift', *Scriptorium* 7 (1953), 235–59.

Carolingian period. With this investigation the relevance of a wider frame of palaeographical study in the context of examination of neumatic notations was forcefully re-established; correspondence between Jammers and Bischoff indicates the extent to which Jammers was in touch with the most modern thinking about study of early medieval manuscripts already by 1953, as well as his respect for the discipline of palaeography.[140]

When, in 1900, the *archiviste-paléographe* Pierre Aubry published the texts of lectures delivered at the Institut catholique in Paris,[141] he was clearly challenged by the number of different points of view about musicological method and aims he had encountered: with a certain frustration he noted 'si, au cours de ces études, nous rencontrons une édition qui satisfasse la foi du chrétien, le goût de l'artiste et l'esprit critique du savant, nous nous attacherons à elle'.[142] At the end of these lectures, his demand for scientific spirit in musicological studies could hardly have been more strongly expressed: 'alors, clerc ou laïque, chacun comprendra qu'en musicologie, il n'y a point deux poids ni deux mesures, mais une seule méthode applicable à la musique profane et à la cantilène sacrée. Nous n'avons pas, en matière scientifique, le droit de dire: *Credo, quia absurdum!*'[143] Fifty years later such a call for rigour would have seemed superfluous, just as the cry for unanimity would fall on deaf ears. By then, those interested in the restoration of chant as a basis for its performance, and in its aesthetic qualities as music, had largely become separated from those who would study chant and its notations as a historical phenomenon. Even for the monks of Solesmes, the divide had become a chasm: the older spirit of *Paléographie musicale*, combining facsimiles with studies of repertories, genres and notations of Gregorian chant, was abandoned in favour of separated studies and facsimiles. Within ten years, a monk who had joined Solesmes in 1940 would abandon his monastic vows, forsaking the study of chant restoration for the study of its history and notations.[144]

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[140] Letters from Bischoff to Jammers dated 27.7.53 and 15.1.54 survive in the Jammers Nachlass in the Staatsbibliothek in Berlin; at the time of writing that Nachlass has not been fully sorted, and there may well be more evidence of their correspondence. Four letters from Jammers to Bischoff (dated 17.8.63, 5.9.63, 25.10.63, 30.11.63) are in the Bischoff Nachlass in the Bayerische Staatsbibliothek in Munich (Ana 353 C,I, Jammers). In 1953/54 they were discussing fundamental issues about the origin of neumes; in 1963 the main topic was dating of the Oxford fragment (Auct. F.4.26), which was reproduced in Jammers's *Tafeln* volume, published in 1965.

[141] This was the degree delivered by the École des Chartes, and thus identified Aubry as a Chartiste; his dissertation on 'La philologie musicale des trouvères' was presented in 1898: see Prou (ed.), *Livre du centenaire*, no. 502 (p. 269).

[142] 'If, in the course of our studies, we come across an edition which might satisfy the faith of the Christian, the taste of the artist and the critical spirit of the scholar, we will attach ourselves to it.' Pierre Aubry, *La musicologie médiévale. Histoire et méthodes*, Mélanges de musicologie critique 1 (Paris: Welter, 1900), vi.

[143] 'Thus, clerical or lay, everyone will understand that in musicology there cannot be double standards, but [instead] a single method appropriate to secular music as well as sacred melody. In matters of scientific thought we do not have the right to say "I believe because it is absurd".' *Ibid.*, 134. 'Credo quia absurdum' is a common paraphrase of a statement by Tertullian in *De carne Christi*, expressing belief against reason.

[144] Michel Huglo left Solesmes in 1960, after working on *Le Graduel Romain. Edition critique* II: *Les Sources* (Solesmes: Abbaye Saint-Pierre, 1957). For bibliographies of his subsequent work, see 'Bibliography of the Writings of Michel Huglo (1949–1992)', ed. Nancy C. Phillips, in Wulf Arlt and Gunilla Björkvall (eds.),

2.3 MANUSCRIPTS AS MATERIAL OBJECTS:
THE POST-WAR YEARS

Already in the earliest volumes of *Paléographie musicale* a collection of information about manuscripts notated in neumes was being assembled and publicly presented. Those manuscripts represented in the thirty-one plates that accompanied Mocquereau's 'Origine et classement des différentes écritures neumatiques' in the first volume may now appear an odd selection for their purpose: probably they simply reflect what was easily available in photographic form.[145] For the next two volumes, the procedure was already more systematic, not only because it was the intention to use these 211 plates to demonstrate that 'we have – in reality and in full – in the manuscripts without lines and with lines, the authentic version of the reformer of religious music',[146] but also to show the various sorts of writing ('diverses sortes d'écritures') and phases of music notation ('phases de la notation musicale') in which Gregorian chant was transmitted.[147] At this point, there was no especial attempt to report on the earliest notated manuscripts: the only known fully notated chant manuscript thought to date from the ninth century was CSG 359, while other early examples comprised books for priests and lectors, or chants added in margins or empty space to non-musical manuscripts.[148] When, in contrast, Amédée Gastoué (1907), Peter Wagner (1912), and Henry Mariott Bannister (1913) did seek to identify early examples of neumatic notation, their efforts were not much more successful, given their lack of palaeographical knowledge;[149] indeed, the lack of a solid basis for dating manuscripts is one of a small number of criticisms made of Bannister's *Monumenti* by E. K. Rand.[150]

Recherches nouvelles sur les tropes liturgiques, Acta universitatis Stockholmiensis. Studia Latina Stockholmiensia 36 (Stockholm: Almqvist & Wiksell, 1993), 449–60; 'Bibliographie de Michel Huglo', [ed. Barbara Haggh], in Michel Huglo, *La Théorie de la musique antique et médiévale*, Variorum Collected Studies Series CS822 (Aldershot: Ashgate, 2005), 1–16; 'Bibliography of Michel Huglo, 2005–2012, with Earlier Addenda or Corrigenda and Later Posthumous Publications', ed. Zoe Saunders and Barbara Haggh-Huglo, *PMM* 25 (2016), 93–101.

[145] These manuscripts include: Angers BM 83, 89; Chartres BM 47, 130, 520, 529; London BL Add. 34209 (at that time in the ownership of Jacques Rosenthal of Munich and later to be published as *PM 6*); BNF lat. 1087, 1132, 1240, 12055; Rome Biblioteca Nazionale Sess. 136; Rome Biblioteca Vallicelliana B 81; Sankt Gallen, Stiftsbibliothek 339, 353, 359, 361, 390; a fragment owned by Solesmes; BAV Vat. lat. 4750.

[146] 'nous possédons réellement & intégralement, dans les manuscrits sans lignes & sur lignes, la version authentique du réformateur de la musique religieuse': *PM* 2, 4.

[147] *PM* 2, 2.

[148] For a list of the notations represented in these early volumes of *Paléographie musicale* as of the ninth century, see Corbin, *Die Neumen*, 3.23.

[149] Franz Steffens, editor of *Lateinische Paläographie* (Freiburg, Schweiz: Universitäts-Buchhandlung), first published in 1903, was professor of Palaeography and Diplomatic at the University of Fribourg between 1889 and 1930; Peter Wagner was appointed lecturer at Fribourg in 1893, professor in 1902 and rector in 1920. Steffens reproduced one page of the Hartker antiphoner (Plate 70), and cited in his notes on it Wagner's 1905 *Neumenkunde*; Wagner never cited Steffens.

[150] Rand, review of Bannister's *Monumenti*, 470: Rand notes Bannister's too heavy dependence on August Reifferscheid, *Bibliotheca patrum latinorum Italica*, 2 vols. (Vienna: Gerold, 1865–72). Given Bannister's close association with E. A. Lowe in the years when Lowe was based at the American School of Classical Studies in

This lack of breadth and accuracy in the consideration of early medieval manuscripts that contained music notation would be radically altered in the 1950s and 1960s. After the Second World War, access to and knowledge about manuscripts seems to have been transformed: the danger of destruction, a fate suffered by more than one important manuscript collection in the war years, and the perceived nuclear threat heightened the sense of a need to gather in this material heritage. A whole range of different strategies was the result.[151] Technological advances in microfilming supported a process of conservation through reproduction. Studies that would support scholarly aspirations to control surviving manuscript material had already begun to appear: by 1950, the first four volumes of *Codices latini antiquiores*, edited by Elias Avery Lowe – another of Ludwig Traube's pupils – had presented descriptions and pictures of manuscripts copied before 800 in the Vatican, in Great Britain and Ireland, and in Italian libraries.[152] The first volume of Bernhard Bischoff's *Die südostdeutsche Schreibschulen und Bibliotheken in der Karolingerzeit* first appeared in 1940, and certainly some copies were in circulation beyond Germany;[153] since Bischoff always remarked the presence of music notation when describing manuscripts, this volume introduced to musicology a level of palaeographical expertise that would allow a much greater degree of control of the materials that needed to be examined by anyone interested in early medieval notations.[154] Bruckner's enormous *Scriptoria medii aevi helvetica* had already accumulated five volumes between 1935 and 1943, while the first volume of the *Catalogue des manuscrits datés* supported by the Comité international de paléographie was published in

Rome (1907–11), the lack of impact of his work on Bannister's catalogue is surprising; on their contact see Virginia Brown, 'E. A. Lowe and the Making of *The Beneventan Script*', *Miscellanea bibliothecae apostolicae Vaticanae*, Studi e Testi 433 (Vatican: BAV, 2006), 27–89, at 63. On the problems more generally encountered in the dating of manuscripts during the first decades of the twentieth century, see Donald Bullough, 'Review Article: A Scholar's Work is Never Done', *Early Medieval Europe* 12/4 (December 2003), 399–407.

[151] On the reaction of various populations to the bombing of cities where important manuscript collections were held, and the fears induced by the threat of a nuclear bomb, see Marina Smyth, 'La formation d'une filmothèque américaine. Les manuscrits de l'ambrosienne à l'université de Notre Dame', *Gazette du livre médiéval* 58/1 (2012), 51–62. On the more general issue of the destruction of libraries in the two world wars, see Hans van der Hoeven, *Memory of the World: Lost Memory – Libraries and Archives destroyed in the Twentieth Century* (Paris: UNESCO, 1996).

[152] *CLA* 1 (1934), 2 (1935), 3 (1938), 4 (1947).

[153] For example, the volume is described in André Vernet, 'Études et travaux sur les bibliothèques médiévales', *Revue d'histoire de l'église en France* 34 (1948), 63–94, at 72. Unsold copies in the publisher's warehouse in Leipzig were burnt as a result of the bombing of Leipzig in 1944: see the 'Vorwort zu 2. Auflage' in the second edition (Wiesbaden: Harrassowitz, 1960).

[154] Manuscripts containing musical notation described in this volume include Munich BSB clm 3005 (*Schreibschulen*, I, 55–6, 'the Andechs missal'), and Munich BSB clm 6325, where notes previously described as Tironian were recognized by Bischoff as musical (*Schreibschulen*, I, 107). The second volume of *Schreibschulen* was not published until 1980, although it also largely depends on Bischoff's 1933 doctoral dissertation ('Vorwort', ix): in this second volume music annotations in many more manuscripts are remarked.

1959, following its first colloquium in 1953.[155] In several ways the *CMD* was used as a model for the three volumes of the *Répertoire de manuscrits médiévaux contenant des notations musicales* initiated by Solange Corbin and edited by Madeleine Bernard.[156] The significance of manuscript collections in representing an early medieval Europe-wide political and spiritual strategy, and the ability of individual manuscripts to bring that alive for modern citizens of European countries, were recognized in the inclusion of over 150 manuscripts and documents in the great Charlemagne exhibition mounted at Aachen in 1965.[157] Organized under the auspices of the Council of Europe, this is probably the closest that such manuscript materials and studies came to political activities since the time of Charlemagne himself.

By now palaeography and manuscript studies had been transformed from a field that supported the study of literature (above all classical), the establishment of critical texts, and the writing of national, thus political, histories, to one that embraced wider cultural dimensions: 'For manuscripts as monuments of writing display the art of the scribes and miniaturists, the relation of clerical and lay magnates to the treasures of literary transmission, the studies of the learned, life in the schools, the establishment of religious communities, links between cultural centres – to name only some of their features.'[158] In this context of interest in manuscripts as the carriers of cultural history, studies of early medieval music positively flourished, now demonstrating not only an interest in the oldest notated manuscripts but also an ability to isolate the relevant evidence accurately.

All those directions of enquiry into neumatic notations that would be followed in the years between the Second World War and the present day can be found represented in a notable series of studies published between 1949 and 1954. Already in 1949 Michel Huglo used the occasion of a review of *CLA* I-IV to set out an agenda for the study of individual

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[155] Albert Bruckner, *Scriptoria medii aevi helvetica: Denkmäler Schweizerischer Schreibkunst des Mittelalters*, 11 vols. (Geneva: Roto-Sadag, 1935–73); Charles Samaran and Robert Marichal, eds., *Catalogue des manuscrits en écriture latine portant des indications de date, de lieu ou de copiste, I: Musée Condé et Bibliothèques Parisiennes* (Paris: CNRS, 1959).

[156] Madeleine Bernard and Solange Corbin, eds., 1: *Bibliothèque Sainte-Geneviève, Paris* (Paris, 1965); 2: *Bibliothèque Mazarine, Paris* (Paris, 1966); 3: *Bibliothèques Parisiennes. Arsenal, Nationale (Musique), Universitaire, École des Beaux-Arts et fonds privés* (Paris, 1974). The layout and type of content of the entries in Corbin and Bernard's *Répertoire* are modelled precisely on those in the *CMD* I, with an extra section on notation; the 'jeune équipe' of the *CMD* as well as Charles Samaran are expressly thanked in Corbin's *Avant-propos*. Both series were published by the CNRS, using the same fonts and bindings.

[157] The catalogue was published as *Karl der Grosse. Werk und Wirkung* (Aachen, 1965), with a preface by Wolfgang Braunfels. In parallel to the exhibition a series of books of collected essays was issued: in the volume entitled *Das geistige Leben*, ed. Bernhard Bischoff (Düsseldorf: Schwann, 1965), essays by Bischoff and by Bonifatius Fischer were dedicated to various aspects of book culture.

[158] Bischoff, *Schreibschulen*, I (1960), 2: 'Denn die Handschriften als Schriftdenkmäler offenbaren die Kunst der Schreiber und Miniatoren, das Verhältnis geistlicher und weltlicher Grosser zu den Schätzen der literarischen Überlieferung, die Studien der Gelehrten, das Leben in den Schulen, die Zusammensetzung der klösterlichen Gemeinschaften, Verbindungen hin und her zwischen den Kulturzentren, – um nur einige ihrer Beziehungen zu nennen.'

notated examples: while warning (as had Wagner) that many examples of notation in ninth-century manuscripts represented more recent additions, he nevertheless asked – in hope, I think – whether anyone would find an example of neumes written in the eighth century, following this with a swift review of places one might look.[159] Since the dating and contextualization of manuscripts as sources of musical repertories and notations had become more achievable, the level of discussion could be much more nuanced than previously: an immediate response to Huglo's question came in 1952 in Solange Corbin's first published study of notation. In 'Les notations neumatiques en France à l'époque carolingienne', she embarked on the first of several attempts to work out which French notations might be dated in the ninth century and answered a resounding 'no' to Huglo's question about eighth-century neumes; she also went on to set out the basis of a typology of regional notation types.[160]

The most dramatic episode in post-war studies of neumatic notations would take place outside of France, however. In three studies written in German the key focus was not the date when a notation had been written in a manuscript but the nature of a particular kind of notation, considered by the two scholars writing these studies to be *the* oldest or among the oldest types of neumatic script: Jacques Handschin's 'Eine alte Neumenschrift' appeared in 1950,[161] Ewald Jammers's study of Essen manuscripts in Düsseldorf in 1952,[162] and his 'Die palaeofraenkische Neumenschrift' in 1953.[163] In 1950, Handschin had carefully left this notation without a name; in 1953, Jammers writes that, 'according to the wish of Professor Handschin', he would like to name this notation 'paläofränkische Schrift',[164] and goes on to be even more precise about the positions adopted: 'whereby Handschin plainly understands *the* old Frankish script, the author only *an* old Frankish script'.[165] In the meantime Handschin reported his agreement with Jammers that the script should be named 'Prä-Metzer'.[166] Behind these published texts lies an intense exchange and negotiation between Jammers and Handschin: who had discovered this new notation (both eventually admitted that Dom Beyssac of Solesmes had known it before either of them);[167] how to share their thoughts

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[159] Michel Huglo, review of Lowe's *CLA* 1–4, *RG* 20 (1949), 77–80.

[160] 'Les notations neumatiques en France à l'époque carolingienne', *Revue d'histoire de l'église en France* 38 (1952), 225–32.

[161] *AM* 22 (1950), 69–97; and 'Zu "eine alte Neumenschrift"', 25 (1953), 87–8.

[162] *Die Essener Neumenhandschriften der Landes- und Stadtbibliothek Düsseldorf* (Ratingen: Aloys Henn, 1952).

[163] *Scriptorium* 7 (1953), 235–79.

[164] 'Die palaeofraenkische Neumenschrift', 238.

[165] *Ibid.*, n. 16: 'wobei Handschin darunter schlechthin d i e alte fränkische Schrift, der Verfasser nur e i n e alte fränkische versteht'.

[166] 'Mit Herrn Dr. E. Jammers haben wir uns vorläufig, wenn auch nicht ohne Zögern, darauf geeinigt, diese Neumenschrift die "Prä-Metzer" zu nennen' ('Zu "Eine alte Neumenschrift"', 88).

[167] See the letter from Handschin to Jammers dated 17.10.51, in which he lists those manuscripts containing this notation known to Dom Beyssac (Jammers Nachlass, Berlin Staatsbibliothek).

and insights;[168] and, above all, where this notation had been designed and used, and therefore what it should be called.[169] It is clear that both Handschin and Jammers recognized Palaeofrankish script (for this is the name that has stuck) as critical to the discussion of the invention and character of the earliest medieval notations.[170]

This 'Palaeofrankish' script, or 'notation de St Amand' as it had been known at Solesmes, was completely absent from the 'Carte géographique des notations' provided by Suñol in 1935. Consciousness of script types had certainly been present in the oldest writing on neumatic notations, and already given prominence in Mocquereau's 1889 'oratoire' and 'diastematique' typology based on accents and points: even if still largely based on Mocquereau's old script denominations, Suñol's study had appeared comprehensive – before the war. Now, with an increased degree of manuscript knowledge and awareness of notational variety, the insufficiency of that 'géographie' of neumes had been exposed.[171] In 'Le domaine de la notation messine' published in 1951, Jacques Hourlier set a new benchmark for the study of neumatic notations through the lens of one particular type of script. Declaring his interest in the development of ways of writing neumes, an evolution that could be studied through 'currents and zones of influence', he attempted to make a complete list of all the manuscripts in which this kind of notation could be found.[172] Hourlier's Messine study quickly had two significant successors: in a thesis for the *doctorat ès lettres* submitted in 1957, Solange Corbin undertook an enormous venture, underpinning her study of notation in the four Lyonnaise provinces of Lyon, Rouen, Tours and Sens with an extensive study of all early examples of neumatic

[168] This is an ongoing theme in their correspondence: in November 1951, Handschin wrote to Jammers, 'Sie wissen, dass ich Ihnen in Paris alles, was ich in der Sache hatte, bereitwillig zur Verfügung gestellt habe, ohne zu fragen, ob Sie mir etwa mit der Veröffentlichung von Dingen (die übrigens Dom Beyssac entdeckt hatte) zuvorkommen wurden' (6.11.51, Jammers Nachlass). The reference to Paris is to the 'Internationaler Tagung der Musikbibliotheken' that took place in Paris in the summer of 1951. The possibility of sharing their thoughts and reactions to each other's ideas in some published form was eventually rejected by Jammers, evidently to the regret of Handschin (see card of 17.11.51). The discussion had begun while Jammers was working in the Landes und Stadt-Bibliothek in Düsseldorf, including among his tasks the cataloguing of liturgical manuscripts (see letter from Jammers to Handschin, 23.10.51); by early 1952 he had been nominated for a post in the Universitäts-Bibliothek of Heidelberg.

[169] Handschin to Jammers (28.2.52), not 'Gallican', and could have come from Rome as much as from anywhere; (17.7.52), 'Prä-Metz'; (25.7.52) setting out several possibilities; (11.8.52), 'eine alte frk.N.schrift'; (15.8.52), 'ich muss doch "Prä-Metz" proponieren'; (6.9.52), 'nein, sagen wir doch "paläofränkisch"! (im Sinne eines Provisorimus)!!'. Copies of some of Jammers's replies survive in his own Nachlass, but I have been unable to find the letters received by Handschin.

[170] On the discovery and naming of this script type, see also Jacques Hourlier and Michel Huglo, 'Notation paléofranque', *EG* 2 (1957), 212–19, at 213 and 217; and Huglo, 'Bilan de 50 années de recherches (1939–1989) sur les notations musicales de 850 à 1300', *AM* 62 (1990), 224–59, at 239.

[171] The most direct criticism of Suñol's map is in Corbin's 'Les notations neumatiques'.

[172] *RG* 30 (1951), 96–113, 150–8.

notation.[173] Here she presented a detailed 'Carte des notations neumatiques dans le nord de la France' showing the zones and centres in which five different neumatic scripts were used, with indications of dioceses, bishoprics, archbishoprics and monasteries (reproduced without alteration in the posthumous *Die Neumen* of 1977). Then, in 1963, modelling his approach directly on Hourlier's, Michel Huglo published 'Le domaine de la notation bretonne'.[174]

The extent to which, in the work of Corbin and in these two studies of individual notations, the organization of thought and discourse about neumatic notations was determined primarily by regional boundaries may now appear exaggerated; yet, at that point, the ability to place manuscripts and notations with that degree of precision represented an enormous achievement and advance on previous work. Corbin's work for her thesis aimed to identify local script characteristics across a large area of France;[175] the posthumous *Die Neumen* contained a table showing specific neumes on one axis and script types, determined by regional names, on the other.[176] This regional approach, delineating the areas where particular kinds of script were written, and in which periods, such that it might be possible to use this evidence to situate a manuscript in time and place, was also very much in step with palaeographical interests beyond musicology. In the introduction to the first volume of the *Catalogue des manuscrits datés* published in 1959,[177] the dating and localization of manuscripts and their script types were proposed as the principal interests of the series,[178] with, as an imagined result of the whole series, an *atlas paléographique* and a *géographie graphique de l'Europe* (for the fourteenth and fifteenth centuries)[179] – this notwithstanding the criticism of too much confidence in palaeographical precision made by Marc Bloch during the occupation of France, and quoted in Samaran's introduction.[180]

In studies of neumatic notations published between 1949 and 1954, two other subjects that would later expand to create and/or accommodate specific realms of discourse about Gregorian chant should be noticed. As with the investigation of manuscripts and notations,

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[173] Solange Corbin, *La notation musicale neumatique. Les quatre provinces lyonnaises: Lyon, Rouen, Tours et Sens*, unpublished PhD dissertation (University of Paris, 1957); this consists of two volumes of text (758 pp.) and one of photographic plates.

[174] *AM* 35 (1963), 54–84; this was re-edited, with plates, maps and a manuscript index, as *Britannia Christiana. Études et documents sur l'histoire religieuse de la Bretagne* 1 (Daoulas: Abbaye de Landévennec, 1981).

[175] In her 1952 'Les notations neumatiques' she had already described neumes as 'un précieux élément d'identification' (225).

[176] This table, set at the end of the volume, has no title, and I am unaware as to whether it was added by the editors of the volume. A similar (although clearer) table appears in the article that bears her name in the 1980 *New Grove Dictionary*, 'Neumatic Notations', §I–IV, XIII, 128–44, along with maps of notations and ecclesiastical centres in France, Spain and Italy. In the later edition, this article was amalgamated with another on notation, now appearing under the heading 'Plainchant'.

[177] At that stage named *Catalogue des manuscrits en écriture latine*.

[178] *Ibid.*, vii–viii.

[179] *Ibid.*, xiv.

[180] *Ibid.*, xiii–xiv.

a preoccupation with performance questions, above all rhythm and articulation, was not new in the post-war period. But the direction those studies would begin to take after the war was decisively marked by the work of a Solesmes monk whose first publication appeared in 1952.[181] In a careful study that set the tone for all his subsequent work, Dom Eugène Cardine set out on a new path through a complex of notational information about performance: by 1959 the description 'coupure neumatique' had entered musicological vocabulary.[182] Around Cardine a school interested in what became known in the 1960s as 'sémiologie grégorienne' developed:[183] many among his colleagues and pupils contributed to building a new way of reading neumatic notations and singing Gregorian chant.[184]

Finally, it was in these post-war years that an issue that would dominate discussions of Gregorian chant and its notations in the last quarter of the twentieth century emerged as a significant topic. At this time, it was not transmission ('Überlieferung') in its own terms that was of interest; indeed, the intense musicological discussion of the relation between the 'Old Roman' and the 'Gregorian' chant repertories that developed in the 1950s did not really visit the subject of notation at all.[185] But the stand-off between perceptions of the chronological relation of Old Roman and Gregorian repertories was certainly a stimulus for thinking about how music was communicated from one generation to another, and from one geographical situation to another. In 'Zur Entstehung der gregorianischen Melodien' (1951), Bruno Stäblein set out the claim, with solid documentation, that what was called Gregorian chant in the modern world did not reach all the way back to Gregory.[186] By 1954 Helmut Hucke would describe Gregorian chant as a 'Frankish transmission' that

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[181] Cardine, 'Signification'. For a bibliography of Eugène Cardine's writings compiled by Bernardino Ferretti, see Göschl (ed.), *Ut mens concordet voci*, 488–91.

[182] 'Neumes et rythme. Les coupures neumatiques', *EG* 3 (1959), 145–54.

[183] Represented by the publicaeion of a collection of notes from Cardine's teaching entitled 'Sémiologie grégorienne', *EG* 11 (1970), 1–158. On the use of the term 'sémiologie', see Jacques Hourlier, 'Sémiologie musicale', *EG* 6 (1963), 153–7.

[184] The Associazione Internazionale Studi di Canto Gregoriano and its journal, the *Beiträge zur Gregorianik*, remains the centre of semiological analysis and of much consideration of the detail of particular neumatic notations.

[185] In Helmut Hucke and Joseph Dyer, 'Old Roman Chant', *NG* 2, XVIII, 81–5, the bibliography includes as many as fourteen articles for the period 1950–60 (by Lipphardt, Stäblein, Hourlier, Huglo, Hucke, Smits van Waesberghe, Apel, Schmidt, Snow, Frénaud and Gajard). As indicated by Apel's title 'The Central Problem of Gregorian Chant', *JAMS* 9 (1956), 118–27, the main subject of historical interest for those working on Gregorian chant in this period was the identity of the melodies represented in the widespread tradition known as 'Gregorian', their relation to those represented in a small number of late eleventh-century Roman manuscripts, and establishing where in Rome particular melodic repertories were sung.

[186] *Kirchenmusikalisches Jahrbuch* 35 (1951), 5–9. The suggestion that there might not be a direct link between Pope Gregory and the repertory transmitted as 'Gregorian chant' had already been made by François-Auguste Gevaert in 1890 in *Les Origines*, 16ff, and again in *La Mélopée antique dans le chant de l'église latine* (Ghent: Hoste, 1895), xii ff; his views were not cited before Helmut Hucke, 'Toward a New Historical View of Gregorian Chant', *JAMS* 33 (1980), 437–67, at 444.

represented an adaptation of the Roman ('Old Roman') repertory, coming from a different circle and depending on a different stylistic sensibility.[187]

2.4 *NEUMAE LATINI ANTIQUIORES*

In this mêlée of new approaches to Gregorian chant, re-enlivened discussion of its earliest sources and more rigorous knowledge of early medieval manuscripts, the chances of identifying early medieval notations were greatly enhanced. There was now much greater access to palaeographical work on late antique and early medieval manuscripts; more music notations had been found and could be brought into the debate; and there was greater consciousness of the need to differentiate between notations written at the same time as texts and notations added later. In a series of studies, each dependent on and reacting to the last, Corbin and Jammers, and later Hiley, produced lists of manuscripts including examples of notation written in the ninth century. Around this activity of enumerating manuscript sources (with justifying commentary) other questions circulated, some to receive definitive answers and thus quietly disappear, some continuing as central issues, and others now emerging as new considerations.

The most significant question now finally dealt with – to the extent that it has not been raised again since the 1950s – was the possibility of finding neumatic notations well established in written practice before circa 800. After the frantic attempts of the mid-nineteenth century to identify a manuscript that would lead directly back to Pope Gregory,[188] and the more sober work of the Solesmes monks in attempting to establish an edition of melodies that could in some fashion be linked to Gregory,[189] fresh care had been exercised in dating music notations to the eighth century. Nevertheless Suñol proposed three examples of notation for the eighth century:[190] in two of the three cases it was later demonstrated on grounds of content and/or palaeography that the text hands themselves dated from circa 800 (Brussels Bibliothèque royale 10127–10144)[191] or much later in the ninth century (Paris Bibliothèque de l'Arsenal 227),[192] taking these out of the equation.[193]

[187] 'Die Einführung des gregorianischen Gesangs im Frankenreich', *Römische Quartalschrift für christliche Altertumskunde und Kirchengeschichte* 49 (1954), 172–87, at 186: 'Diese fränkische Überlieferung des Gregorianischen Gesanges stellt melodisch eine Bearbeitung des römischen dar. Sie kommt aus einem anderen stilistischen Umkreis, aus einem anderen Stilgefühl.'

[188] See above, pp. 16–19.

[189] For a Solesmes view dating from the immediate post-war period see *Le Graduel Romain. Edition critique*, IV, 1: *Le Texte neumatique*, ed. the monks of Solesmes (Solesmes: Abbaye Saint-Pierre, 1960), 7–17.

[190] Suñol, *Introduction*, 32.

[191] *CLA* 10: 1548. This sacramentary-antiphoner is, in any case, unnotated, with only a few neumes added on the first page of the antiphoner (fol. 90r).

[192] See Victor Leroquais, *Les Pontificaux manuscrits des bibliothèques publiques de France*, 4 vols. (Macon: Protat Frères, 1937), I, 263–70, at 269–70; also *BK* III, no. 3915.

[193] In the third case it is not exactly clear which manuscript he was citing: with 'des fragments du manuscrit 6 d'Autun' Suñol cannot have intended either S5(6) or S6(6a), neither of which has any notation; Corbin (*La Notation musicale neumatique*, II, 488) explains that he is referring to an eighth-century manuscript written

In 1949 Huglo re-voiced the issue, asking whether, as a result of the work by Lowe on manuscripts copied before 800, neumes written before 800 would be discovered.[194] Solange Corbin took up the challenge, immediately exercising caution in dating notations in the same period as the texts they accompany. In 1952 she listed four eighth-century manuscripts in which short examples of neumatic notation had been found, without directly dating any of these notations to the same early date; later in the same study, when discussing the state of neumes that could be more securely dated (in the period after 840), she wrote of neumes in general 'On ne possède actuellement aucune donnée sur leur état premier'.[195] By 1957 her assessment had become more solid: 'aucun livre noté anterieur à l'année 820 environ n'est accessible actuellement, et nous croyons une telle découverte improbable'.[196] In this doctoral thesis, Corbin had worked methodically through the available volumes of *CLA*, checking all the liturgical books by then listed: she had also consulted Lowe directly.[197] She also examined all the cases of notation cited as ninth century by previous writers, and established a new list, including four examples in books dated between 830 and 900 for which she claimed that the music notation had been written by the first hand, and two others that she dated in the ninth century, without linking the notation to the copying of the text; she further noted that, before Aurelian of Réôme (writing in the mid-ninth century), music theorists did not speak of neumes.[198] When, in 1987, Kenneth Levy proposed that 'an authoritative neumed recension' of Gregorian chant was in use by the middle of Charlemagne's reign, thus 'shortly before 800', he did not suggest that actual examples written at that time had been or would be identified.[199] The Huglo view, restated in 1987, that 'the origins' of neumatic script 'could well have been worked out shortly after 800' has not been questioned since.[200]

The setting aside of eighth-century neumatic notations as a historical fantasy was not all that was achieved through careful work: Corbin's methodical perusal of catalogues such as

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in uncials and gives the number 4/5. Her description surely indicated the manuscript now shelved as S3(4), the gospels of Flavigny, where there is notation over some gospel passages, as well as fragments from a late ninth- or early tenth-century notated gradual, now used as endleaves.

[194] Huglo, review of Lowe, *CLA* 1–4, 79.

[195] 'At the moment we have no information at all about their earliest form.' Corbin, 'Les notations neumatiques', 227, 231.

[196] 'No notated book made before around 820 is currently known, and we believe such a discovery to be unlikely.' Corbin, *La Notation musicale neumatique*, II, 659.

[197] *Ibid.*, and II, 495–508. Her letters to Lowe are now in the Pierpont Morgan Library, New York.

[198] Corbin, *La Notation musicale neumatique*, II, 575ff.

[199] The study was dedicated to Michel Huglo on his 65th birthday. Kenneth Levy, 'Charlemagne's Archetype of Gregorian Chant', *JAMS* 40 (1987), 1–30; rep. in his *Gregorian Chant and the Carolingians* (Princeton University Press, 1998), 80–108, at 80 and 106. Levy does not cite extant examples of notation written before 800.

[200] 'La même obscurité règne sur les origines de la notation neumatique qui pourrait bien avoir été élaborée peu après l'an 800': Michel Huglo: 'La notation wisigothique est-elle plus ancienne que les autres notations européennes?', in Emilio C. Rodicio, Ismael Fernández de la Cuesta and José López-Calo (eds.), *Actas del Congreso Internacional "España en la Música de Occidente": Salamanca 1985* (Madrid: Instituto Nacional de las Artes Escénicas y de la Música, 1987), 19–26, at 19.

those made by Leroquais and Lowe, and examination of manuscripts to which she had access, led her to introduce a new dynamic into study of early neumatic notations. As early as 1936, Jammers had argued that there had first been two different kinds of neumatic script, described roughly as 'Aquitanian' and 'East Frankish' (for which Sankt Gallen offered late examples, while Leipzig Universitätsbibliothek Rep. I 93 (*olim* 169) offered examples of the 'original kind');[201] he considered the Aquitanian script to have been associated with the Gallican liturgy (as celebrated in Roman Gaul up to the late eighth century). That indicated his association (in common with all previous writers) of neumatic notation with ecclesiastical chant. Corbin's experience led in a different direction: those examples she had judged to be written in the ninth century consisted of short additions to pre-existing text, and were written only in 'signes rudimentaires'.[202] These notations were written on pages not prepared for notation; indeed, 'les livres destinés à contenir des pièces chantées n'ont jamais été prévus pour recevoir une notation',[203] and therefore – most radically –'le copiste du IXe siècle en ignore l'idée, il ne sait pas lui réserver une place comme le fera son ascendant au Xe siècle'.[204] By 1959 she felt able to state categorically of music notations 'tous ces essais accompagnent des pièces profanes ou non-liturgiques'.[205] This was a provocative hypothesis: the invention of notation was being broken loose of its assumed bond to ecclesiastical chant. If ninth-century scribes copying chant texts did not even know about notation, let alone use it, why then was music notation invented?

In turning the dating argument around to a new focus, Corbin also implicitly questioned theories of the origin of neumes, in terms not of the signs out of which neumes were conceptualized (since she stayed close to Coussemaker's and Mocquereau's views about accents),[206] but of the passage between their invention and the evidence of the extant manuscripts. In 1952 she had stated that 'it seemed as if there had once been a prototype [neumatic script] about which we know nothing, other than that it was reproduced in different regions in different ways'.[207] By 1957 she seems deliberately to leave this part of the history of neumatic scripts in the dark, and does not mention the prototype again. Now she evaluated the earliest examples as consisting of rudimentary signs and to be representative of 'several primitive systems',[208] and then proposed a 'trial period' when neumes were only

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[201] Jammers, 'Zur Entwicklung', 90.

[202] Corbin, *La Notation musicale neumatique*, 510–11.

[203] 'Books made for the sung chants were never intended to receive notation.' *Ibid.*, 511.

[204] 'The ninth-century scribe had no experience of the concept, he did not know how to provide a space [for notation] in the way that his successor would do in the tenth century.' *Ibid.*, 511.

[205] Corbin, 'Paléographie musicale', *École Pratique des Hautes Études. Section des Sciences Historiques et Philologiques. Annuaire 1958–59* (Paris: EPHE, 1959), 66–7, at 66.

[206] See especially *Die Neumen*, 3.19–21; in *La notation musicale neumatique*, I, 122–4, Corbin had set out the historical problems of the Solesmes accents and points hypothesis with great clarity.

[207] Corbin, 'Les Notations neumatiques', 228: 'tout se passe comme s'il y avait eu un prototype dont nous ignorons tout, sauf qu'il a été reproduit de façon différente suivant les régions où elles se produisent'.

[208] Corbin, *La Notation musicale neumatique*, II, 660.

known by some specialists and not 'within reach' of 'common copyists' between 850 and 950.[209] Much later, these ideas about the early development of neumatic scripts would be given more substantial shape by Helmut Hucke, when he described neumes in the earliest sources of Gregorian chant 'not as *one* script, but in the form of several neumatic scripts',[210] and then went on to argue that the transfer of Gregorian chant from oral to written transmission might have happened [contemporaneously] in different places and using different neumatic scripts.[211] Only a year earlier, and without reference to the transmission of chant, Leo Treitler had opened a study of 'the genesis of occidental music writing' with the statement that 'notations of fundamentally disparate types and purposes' appeared 'virtually all at once'.[212] Solidified in this way, it seemed that Corbin's approach had pointed to multiple inventions of music writing rather than an initial creation, undergoing multiple re-creations in the hands of different scribes, as she had suggested in 1952.

The possibility that an older narrative about the origin and development of neumatic scripts from one creative moment would break down had, of course, been recognized by Jammers: as the scholar who had written most extensively about the early history of neumatic notations between 1936 and 1958, it was he who responded most forcefully to Corbin's doctoral thesis. Jammers was committed to more elaborate theories, both about the use of notation in books of ecclesiastical chant and about the progress from simple signs to 'fully developed scripts'.[213] On the latter subject, he developed several versions of a hypothesis throughout his active publishing career: by the mid-1960s, when his main reactions to Corbin's work emerged,[214] he had advanced a hypothesis linking Western neumatic scripts with Eastern Byzantine models.[215] But this link related to an earlier period than Corbin had envisaged for such notations: Jammers had them in use in Rome in the seventh century, and then taken north, to become in East Francia (where there had previously been no music script in use) the basis for the Sankt Gallen neumatic script ('so daß die Denkmäler in

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[209] Corbin, *La Notation musicale neumatique*, II, 661: 'la période d'essais pendant laquelle les neumes sont connus de quelques spécialistes seulement, non de tous, dans des régions déjà diverses, et en tous cas ne sont pas à la portée de tous les copistes courants'.

[210] 'Von den ältesten Zeugnissen an treten uns die Neumen nicht als eine Schrift, sondern in Gestalt verschiedener Neumenschriften entgegen': Helmut Hucke, 'Die Anfänge der abendländischen Notenschrift', in Ernst Herttrich and Hans Schneider (eds.), *Festschrift Rudolf Elvers zum 60. Geburtstag* (Tutzing: Schneider, 1985), 271–88, at 275.

[211] *Ibid.*, 275ff.

[212] Treitler, 'Reading and Singing', 372.

[213] Ewald Jammers, 'Studien zu Neumenschriften, Neumenhandschriften und neumierter Musik', *Bibliothek und Wissenschaft* 2 (1965), 85–161, at 94; the first part of this, 'Die Entstehung der Neumenschrift', was reprinted in his *Schrift Ordnung Gestalt. Gesammelte Aufsätze zur älteren Musikgeschichte* (Bern and Munich: Francke, 1969), 70–87.

[214] Jammers, 'Studien zu Neumenschriften' (1965); *idem, Tafeln*.

[215] 'Studien zu Neumenschriften', 100.

sanktgallischer Schrift zu den besten Quellen der Gregorianik gehören').[216] In the 'highly cultivated' south of western Francia, these Roman, ultimately Byzantine, neumes could not displace the neumatic system already in use, itself also derived from prosodic accent signs. But in the north of western Francia, the two systems came into contact, so that mixed scripts were generated (the Lotharingian, Breton and Palaeofrankish).[217]

What is interesting at this stage is not the substance of Jammers's theories, but the way in which he had worked them out. In the 1965 'Studien zu Neumenschriften' he provided a diagram, setting out a scheme for the development of neumatic scripts.[218] This proposes a pattern of historical change that is hardly believable, given the degree to which it is intricate: it is not that historical contacts, influences and changes should not be represented in ways that reflect multifaceted realities, but that a stemma based on philological principles, in which none of the principal branches and immediate descendants actually exists, may not be appropriate as a model for the development of ways of writing.[219] An important element in the way Jammers's stemma for neumatic scripts was arrived at is the confusion of different methods of reasoning: it combines historical and palaeographical arguments, the former creating the tops of the various branches ('Cheironomie', 'gallische Auswahl u. Schrift', 'Röm. I', 'Röm. II', 'mediterrane Auswahl') and the latter the results ('Aquitan.', 'Paläofränk.', 'Breton.', 'Metzer Schrift', 'St. Gallen, Französ. usw.', 'St. Gall. Reformschriften'). Even the palaeographical arguments are mixed, some dealing with sign shape, some with a more interpretative level of rhythmic meaning.

Another diagram intended to depict the development of neumatic script had been set out in Hourlier and Huglo's 'Notation paléofranque' in 1957.[220] Noticeably less complex than Jammers's diagram, it was constructed on the basis of palaeographical data only. This seems to have infuriated Jammers, who reacted vehemently, claiming that his and Handschin's hypotheses had been treated as 'unbelievable', and (more importantly) that those features of Palaeofrankish script that were similar to Aquitanian script – among which he lists 'mensuralismus', designation of pitch levels and a lack of specific graphic forms – had been silently ignored.[221] The point here is that, in Jammers's thought, many different kinds of argument and threads of historical narrative had become entwined and over-complicated. His interaction with scholarship on Gregorian chant had taken him, in early years, into the discussion of rhythm, especially proportional lengths, and this had altogether shaped his basic ideas

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[216] 'so that the monuments in Sankt Gallen script belong to the best sources of Gregorian melody'. *Ibid.*, 122.

[217] *Ibid.*

[218] *Ibid.*, 124.

[219] On this see further below, p. 183.

[220] Reproduced below, p. 180.

[221] *Ibid.*, 122, n. 89: 'Und sie bezeichnen diese Thesen Handschins und des Verfassers als unglaubwürdig . . . Die Gemeinsamkeit vieler Elemente (Mensuralismus, Bezeichnung des Tonortes, Vernachlässigung gewisser Schriftzeichen, Dinge, die für diese Zeit in echtrömischer Schrift nicht nachzuweisen sind) mit der aquitanischen Schrift wird stillschweigend übergangen.'

about the historical development of neumes. Adding palaeographical results around that became difficult. But it is especially ironic, in view of Jammers having been the first person to put emphasis on the Carolingian period as critical to neumatic developments, that his grand hypothesis should so obviously fail. Small wonder that the discussion of the origins of neumes – to use Arlt's words – simply 'ran aground'.[222] Writing before 1973 for her general account of neumes, Solange Corbin limited herself to short accounts of each of the main older theories of origin,[223] without strong endorsement of any one over another,[224] while Stäblein, writing in 1975, went back to the older cheironomic theory, integrating it with Handschin's Palaeofrankish hypothesis (thus the first written notation was the Palaeofrankish, which represented the writing down of hand gestures).[225]

Jammers's work marked the end of a long period during which studies of neumes set their early development well before the ninth century, and therefore beyond reach, in terms of available examples. Later forays into the origins and development of neumatic scripts set aside these derivative explanations,[226] and concentrated on the Carolingian period as the starting point for this new musical practice of representing musical sound in writing.[227] By the 1970s the debate about possible starting points for neumatic scripts had changed its territory, both chronologically and culturally. Now it was no longer a question of looking for previous examples of musical signs, and trying to join up early medieval examples with them; rather, scholars argued using actual examples (and sometimes adducing arguments from the absence of examples) of early medieval notations. This restriction of historical period and situation made it possible to examine the context for the beginnings of neumatic notations more closely. In this sense origins and development have remained central to discussions of neumatic notations, even if the ways in which these issues are approached has altered dramatically.

This new focus on the Carolingian period as a setting for early neumatic notations would not have been possible were it not for the now more palaeographically secure work and gathering of sources of early medieval neumatic notations achieved since the Second World War. In terms of publication, this building of a manuscript list had been begun in earnest in

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[222] 'ist … still geworden': Wulf Arlt, 'Anschaulichkeit und analytischer Charakter. Kriterien der Beschreibung und Analyse früher Neumenschriften', in Michael Huglo (ed.), *Musicologie médiévale. Notations et séquences. Actes de la table ronde du C.N.R.S. à l'Institut de Recherche et d'Histoire des Textes 6–7 Septembre 1982* (Paris: Champion, 1987), 29–55, at 29; this passage is translated in Treitler, 'The Early History', 318.

[223] *Die Neumen* was published in 1977, but Corbin died on 17 September 1973.

[224] Although she certainly leant towards the combined accent and cheironomy theory propounded by Solesmes. See *Die Neumen* (3.20): 'Undeniably this is a very convincing view' ('Unleugbar ist dies eine sehr überzeugende Anschauung').

[225] Bruno Stäblein, *Schriftbild der einstimmigen Musik*, Musikgeschichte in Bildern, iii/4 (Leipzig: VEB Deutscher Verlag, 1975), 28.

[226] *Ibid.*

[227] This is first stated quite unequivocally by Bruno Stäblein, *Schriftbild*, 7: 'Die Anfänge, erste Ausbildung und zugleich regionale Differenzierung einer Notenschrift finden erst im karolingischen Großreich statt.'

Corbin's 1957 thesis, but her information was profoundly governed by access to catalogues of French manuscripts, and little comparable beyond. Jammers's *Tafeln zur Neumenschrift* of 1965 introduced important German manuscripts into the discussion, including several made known to him by Bernhard Bischoff: these included the two earliest known examples of neumatic notation (in Munich BSB clm 9543, and Oxford Bodleian Library Auct. F.4.26), both dated by Bischoff in the second quarter of the ninth century.[228] In Jammers's 'Studien zur Neumenschriften', also published in 1965, the list contributed by Bischoff comprises five manuscripts, including – most decisively for the study of ninth-century neumations of Gregorian chant – the Gradual Laon Bibliothèque municipale 239.[229] By now the engagement with dating, placing (in terms of geographical origin) and description of the neume types used had become the principal object of concern, and thus debate, among those interested in neumatic notations. Jammers's careful treatment of Corbin's proposals, manuscript by manuscript,[230] was matched by an equally careful list and discussion (where necessary) by Corbin herself in *Die Neumen*. Here, however, Corbin took issue with one of the early datings by Bischoff (the Oxford fragment),[231] while her comments on the other (BSB clm 9543) are confusing: it is omitted from her own list of manuscripts with neumes copied before 850, while refered to elsewhere as 'eine Handschrift aus der ersten Hälfte des 9. Jahrhunderts mit sanktgallischen Neumen'.[232] Most significantly, Corbin suggested a new chronological division in 850, reflecting both her uncertainty and her sureness, the first in relation to the beginnings of neumatic notation and the second in dealing with notations that she judged to already be written in diverse types of script.[233]

Since this scrupulous work by Corbin – which is certainly rigorous, whether or not it is now considered correct – the only other person to have published lists of manuscripts containing ninth-century notations is David Hiley: in the 1980 *New Grove*, his list has twenty-one entries.[234] By 2001, the list had been extended to thirty-eight entries.[235] Although the framework of a dictionary article did not allow Hiley to examine the detail of individual examples, it is clear that he exercised judgement beyond the information provided in the

[228] Jammers, *Tafeln*, 27. On the letters about the Oxford fragment addressed by Jammers to Bischoff see n. 140 above; Bischoff had first signalled the entry in clm 9543 in the first volume of his *Schreibschulen*, published in 1940. On this notation see below, pp. 77–84.

[229] 'Studien zu Neumenschriften', 95. This note, made in 1965, is the first hint of Bischoff's re-dating of Laon 239 from that proposed in the Paléographie musicale facsimile ('after 930') to the last quarter of the ninth century. See now *BK* II, no. 2094.

[230] 'Studien zu Neumenschriften' (1965), 92–5.

[231] Corbin, *Die Neumen*, 3.28–9.

[232] *Ibid.*, 3.30 and 3.60; in a long passage of petit-texte on 3.29, she sharply criticizes Bischoff's linking of the neumed passage with the work of the same scribe higher up the page. Her reasoning does not take into account the fact that letter shapes written by one hand are usually altered in different sizes of script.

[233] *Ibid.*, 3.30 and 41.

[234] Hiley, 'Notation, §III, 1: Western, Plainchant', fig. 17 (p. 346).

[235] David Hiley, 'Notation, §III, 1: History of Western Notation: Plainchant', in *NG* 2, XVIII, 84–119 (see Table 4: '9th-century examples of neumes').

facsimiles cited (which often did not suggest a ninth-century date). The publication of Klaus Gamber's *Codices liturgici latini antiquiores*, including a supplement in which a musicologist had a hand, had clearly been of value to Hiley: these lists included a substantial number of manuscripts made for use by musicians (whether or not they contained music notations) not previously known, and also significant re-datings of well-known manuscripts.[236] One can only regret that such information did not reach Corbin's hands before her death. It was Gamber's work and that of the Solesmes monks on *Les Sources* that allowed Peter Jeffery to assemble his preliminary checklist of the oldest sources of the *Graduale*, in manuscripts copied before 900;[237] this includes four examples of fully notated books or fragments, only one of which has since been relegated to the later tenth century.[238]

Writing an assessment (in 1990) of fifty years of research on music notations of the period 850 to 1300, Michel Huglo remarked on the tendency of musicologists to search for the reasons why neumatic script had been invented and insisted that 'the task of the palaeographer is not to build hypotheses (that are more or less [well] grounded) to explain the origin of notation, but rather to observe the facts, to date and to localize the first witnesses of neumatic notation and, finally, to draw conclusions that do not go beyond the limits of [their] observations'.[239] In accomplishing this task, he noted that several items included in the lists made by Corbin and Hiley should be withdrawn, on the grounds of information about the most recent palaeographical work by Bernhard Bischoff made available through Gamber's *CLLA*. Since musicologists have not generally received codicological training, he explained, they must yield to the conclusions of the palaeographers where the dating of the oldest neumed manuscripts is concerned.[240] Perhaps what he most had in mind here was the rejection in *Die Neumen* of Engyldeo's musical entry in clm 9543, arguably (if it is accepted as

[236] Klaus Gamber, *Codices liturgici latini antiquiores*, Spicilegii Friburgensis subsidia (Freiburg, Switzerland: Universitätsverlag, 1963); 2nd rev. edn in two volumes (1968), with a supplement (1988). The name of Bonifacio Baroffio appears on the supplement.

[237] Peter Jeffery, 'The Oldest Sources of the *Graduale*: A Preliminary Checklist of Manuscripts Copied before about 900', *The Journal of Musicology* (1983), 316–21.

[238] Munich 3005 ('the Andechs Missal'). In his *Schreibschulen* (I, 55), Bischoff had suggested a date of 'um oder nach 900' for this enormous book; in 'Italienische Handschriften des neunten bis elften Jahrhunderts in frühmittelalterlichen Bibliotheken ausserhalb Italiens', in Cesare Questa and Renato Faffaelli (eds.), *Il Libro e il Testo* (Turin: Università degli studi di Urbino, 1985), 169–94, at 192, he later revised that view to mid-tenth century. Mirella Ferrari has suggested to me that this is, if anything, the earliest date, and that the main scribes of this manuscript were active in northern Italy in the late tenth century. On this manuscript, see also Andreas Haug, 'Anmerkungen zum Andechser Missale', in Martin Staehelin (ed.), *Musikalische Überlieferung und musikalische Edition*, Nachrichten der Akademie der Wissenschaften in Göttingen (Göttingen: Vandenhoeck & Ruprecht, 2006), 76–89.

[239] Huglo, 'Bilan', 236: 'La tâche du paléographe n'est pas d'échafauder des hypothèses plus ou moins fondées pour expliquer l'origine de la notation, mais plutôt d'observer les faits, de dater et localiser les premiers témoins de la notation neumatique et enfin de tirer des conclusions qui ne débordent pas les limites de l'observation.'

[240] *Ibid.*: 'Quand il s'agit de dater les plus anciens manuscrits neumés, les musicologues, qui n'ont généralement pas reçu une formation de codicologue, doivent se plier aux conclusions des paléographes.'

made by the scribe Engyldeo) the earliest extant example of early medieval music notation.[241] In any case, Huglo then called for the creation of a collection – evidently modelled on Lowe's *CLA* – entitled *Neumae latini antiquiores*, to be made in collaboration by palaeographers and medieval musicologists.

2.5 WHY, WHERE AND WHEN?

By the 1970s the split between historical and more interpretative studies (*sémiologie*) of neumatic notations was embedded to such an extent that there has been little contact since, at least in relation to studies of early medieval notations.[242] In many ways it is the same manuscripts that draw music historians and musical semiologists, since both groups have interests in the earliest evidence of ways of notating Gregorian chant; but the ways in which those manuscripts are examined or referred to in their work can be very different.[243] The division between these two approaches, already apparent in publications since the 1920s, has been reinforced by differing goals: said very simply, on the one hand, the writing of musical history and, on the other, the understanding of music history in order to provide a basis for singing Gregorian chant. The enterprise of 'palaeography', as a way of exploring neumatic notations, has therefore become an expansive background against which a range of specialized studies can be set.

The most comprehensive single historical monograph on neumatic notations has remained Corbin's *Die Neumen*, published in 1977. Following her early interests, Corbin used this study to extend the methods she had employed to localize and describe notations in her doctoral thesis to a broader geographical area: now she covered neumes written in Germany (with Switzerland and Central Europe), France (divided into five neume families), England, Italy (divided into more than four neume families) and Spain. Through the study of a large number of individual manuscripts, she was able to identify different music script types as written in particular areas, and sometimes specific institutions, and then to construct

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[241] By the time Huglo's study was published two German musicologists had come to the rescue of Engyldeo: see Helmut Hucke, 'Die Anfänge', 272; and Hartmut Möller, 'Die Prosula "Psalle modulamina" (Mü 9543) und ihre musikhistorische Bedeutung', in Claudio Leonardi and Enrico Menestò (eds.), *La tradizione dei tropi liturgici. Atti dei Convegni sui tropi liturgici (Parigi, 1985; Perugia, 1987)*, (Spoleto: Centro Italiano di studi sull'alto medioevo, 1990), 279–96.

[242] But see the remarks by Arlt, in his 'Anschaulichkeit', 30–4, on the impossibility of describing neumes without some level of interpretation; and the studies by Rupert Fischer of pages for the third Christmas mass in a series of manuscripts, published in the *BG* 19 (1995), 61–70, on CSG 359; 20 (1995), 47–60, on Einsiedeln 121; 21 (1996), 75–91, on Laon 239; 22 (1996), 111–35, on Benevento Biblioteca capitolare VI.34; 23 (1997), 89–111, on BNF lat. 776; 25 (1998), 105–19, on BNF lat. 903; and 28 (1999), 73–89, on Chartres 47.

[243] It is also important to recognize that a 'semiological approach' to reading notations of Gregorian chant is not restricted to palaeographical information, but may also involve consideration of musical context, modality and the relation of text to music. For such an approach, see especially Luigi Agustoni and Johannes Berchmans Göschl, *Einführung in die Interpretation des Gregorianischen Chorals*, 3 vols. (Kassel: Bosse, 1987–92).

a Europe-wide map to demonstrate this. Although her studies had evidently begun with much respect for Solesmes, it was now possible to go so far beyond the old Mocquereau accent/point typology that it could be entirely abandoned: text-based palaeography provided a good starting point for dating and localization, which then allowed the description of individual neumatic scripts, and this in turn formed the basis for the identification and localization of further examples. An extremely useful accompaniment, published almost simultaneously, was Bruno Stäblein's *Schriftbild* volume: in comparison to the small and rather inadequate black and white reproductions in *Die Neumen*, the large coloured plates in the *Schriftbild* allowed much more close examination of particular notations, including the eye-catching image from the early tenth-century Spanish antiphoner León Archivio Capitular 8,[244] used also for the dust-jacket. The framework of Stäblein's *Schriftbild* was determined by repertory as well as by notation, allowing discussion of the musical content and context of each example; in addition, this repertorial breadth led Stäblein to choose as cases of early medieval notations an interesting set of examples, most of which had not been published by either Jammers or Corbin.

The centre of Corbin's method was purely palaeographical: the establishment of the 'axe d'écriture' (the precise angle of up and down movements of the pen) and recording of the detail of different neume shapes in specific passages of notation became an integral part of her descriptions and the table of neume forms at the end of the book. Ironically, Stäblein's neume table, set out in the same way as Corbin's (neume type on one axis, and region on the other), is far superior in its capture of variety within regions and within individual scripts.[245] Such a wide European programme as Corbin's has not been repeated by anyone else, although there have been many studies that look at neumatic notations through the lens of named manuscripts,[246] including some undertaken on the basis of library holdings (the MANNO project, dealing with French notations in manuscripts at the BNF, led by Marie-Noël Colette, and, for Vienna, *Musikalische Quellen des Mittelalters in der Österreichischen Nationalbibliothek*, compiled by Robert Klugseder),[247] some that study the notations of a large area (Zapke, *Hispania vetus*, and Baroffio on Italian notations),[248] some that study the

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[244] *Schriftbild*, plate 86 (León Archivio Capitular 8, fol. 198v).

[245] *Schriftbild*, 'Neumentabelle', following p. 32.

[246] I omit, in this very brief bibliographical survey, studies that deal with notations which are not encountered in ninth-century manuscripts.

[247] See http://saprat.ephe.sorbonne.fr/manuscrits-notes-en-neumes-en-occident-manno–26.htm and, for Vienna, www.cantusplanus.at/en-uk/.

[248] Susana Zapke (ed.), *Hispania vetus. Musical-Liturgical Manuscripts from Visigothic Origins to the Franco-Roman Transition (9th–12th Centuries)* (Bilbao: Fundación BBVA, 2007). Giacomo Baroffio, 'Music Writing Styles in Medieval Italy', in John Haines (ed.), *The Calligraphy of Medieval Music*, Musicalia medii aevi 1 (Turnhout: Brepols, 2011), 101–24; *idem*, 'Notazioni neumatiche (secoli IX-XIII) nell'Italia settentrionale: inventario sommario', *Aevum* 83 (2009), 529–79. See also Baroffio's invaluable *Iter liturgicum Italicum. Editio maior* (Stroncone: Assoziazione San Michele Arcangelo, 2011).

notations of one institution (Moderini on Nonantola,[249] Lochner on Echternach,[250] Colette on Corbie),[251] some that consider one notation type (Huglo and Aubert on Aquitanian; Colette on Albi),[252] and several by Hartmut Möller that have problematized the standard regional denomination (used also by Corbin) 'Sankt Gallen neumes', and tried to explore localization of 'German neumes' within the very large area where they were written.[253]

These are studies of a traditional palaeographical kind, aimed at situating ways of writing neumatic notations in time and place. Beyond these, a large number of studies has explored the musical meaning of neumatic notations in relation to pitch patterns, articulation, ways of enunciating and joining text syllables, and other questions that need to be addressed not only for performance but also to understand fine distinctions of neume forms made by some scribes. In that they use notations written by individual scribes in individual manuscripts as their basis, these studies share a starting point with those aimed at matters of identification. Beyond that, however, methods necessarily differ: above all, since different scribes used the very flexible resources of neumatic scripts in different ways – including scribes working in the same scriptorium, and using the same script type[254] – many such investigations concentrate on single manuscripts, and, beyond that, on single neume forms within those manuscripts.[255] Thus it was that, in 1963, Walter Wiesli could demonstrate that the scribe of Sankt Gallen, Stiftsbibliothek 359 (hereafter CSG 359) discriminated between two forms of *quilisma-pes* neume: written with two loops it indicated a movement upward through a major third, while, written with three loops, it could indicate other intervallic relations,

[249] Ave Moderini, *La notazione neumatica di Nonantola*, 2 vols. (Cremona: Athenaeum Cremonense, 1970).

[250] Fabian Lochner, 'La notation d'Echternach reconsidérée', *RB* 44 (1990), 41–55.

[251] Marie-Noël Colette, 'Les fragments et additions marginales notés dans les anciens manuscrits de Corbie conservés à la Bibliothèque nationale de France', *EG* 39 (2012), 13–32.

[252] Michel Huglo, 'La tradition musicale aquitaine. Répertoire et notation', in *Liturgie et musique (ix–xiv s.)*, Cahiers de Fanjeaux 17 (1982), 253–68; Eduardo Henrik Aubert, 'La sémiologie aquitaine classique: problèmes et approches', www.academia.edu; Marie-Noël Colette, 'Le Graduel-Antiphonaire, Albi, Bibliothèque municipale, 44: une notation protoaquitaine rythmique', in László Dobszay (ed.), *International Musicological Society Study Group Cantus Planus: Papers Read at the 6th Meeting in Eger, Hungary (1993)* (Budapest: Hungarian Academy of Sciences Institute for Musicology, 1995), 117–39.

[253] Hartmut Möller, *Das Quedlimburger Antiphonar. Musikwissenschaftliche und liturgiewissenschaftliche Untersuchungen zur Hs Berlin, Staatsbibliothek Preußischer Kulturbesitz Mus. ms. 40047*, unpublished doctoral dissertation (University of Mainz, 1985); *idem*, 'Deutsche Neumen – St. Galler Neumen: zur Einordnung der Echternacher Neumenschrift', *Studia Musicologica Academiae Scientiarum Hungaricae* 30 (1988), 415–30; *idem*, 'Deutsche Neumenschriften ausserhalb St. Gallens', in Peter Cahn and Ann-Katrin Heimer (eds.), *De musica et cantu: Helmut Hucke zum 60. Geburtstag* (Hildesheim: Georg Olms, 1993), 225–42.

[254] For a recent demonstration of different uses within one scriptorium (although the aim of the study is to show consistency) see Franz Karl Praßl, 'Sankt Galler Handschriften als Ausdruck konkreter Aufführingstraditionen', *BG* 52 (2011), 89–110.

[255] Much of this work was accomplished under the supervision of Dom Eugène Cardine: a list of theses by his students can be found in Göschl, ed., *Ut mens concordet voci*, 492–4; and many of the results of this collaborative work are integrated into Agustoni and Göschl, *Einführung*.

most commonly, an upward movement through a minor third.[256] Since much of this kind of information was encoded in early neumatic notations (and lost from later neumatic notations), attention has centred on the earlier manuscripts, especially Laon 239, CSG 359 and Einsiedeln 121.

Other studies also undertaken in this meticulous comparative manner have stepped beyond individual manuscripts to allow comprehension of more widespread graphic techniques and neumatic forms: the phenomenon of *coupure* (graphic discontinuity or separation between neumes) has been explored above all by Eugène Cardine,[257] although the limits of notations in observing *coupure*, especially in later manuscripts (copied after the tenth century), have also been noticed.[258] The presence of rhythmic nuance has been traced in manuscripts that lay beyond the investigations of Cardine and his pupils,[259] while the difficult task of exploring the rhythmic significance of one individual neume (or rather, two ways of writing a sign used to refer to two rising notes) across a range of melodic situations has been attempted by Rupert Fischer. In two studies he sought to demonstrate that, 'by their nature' both 'the *pes quadratus* and the *pes rotundus* gravitate to the second note'.[260] This study was based mainly on three manuscripts (Laon 239, CSG 359, Einsiedeln 121), bringing in others when they added special information: it is unclear to what extent such a broad interpretative claim can be applied across all neumatic notations written in a wide range of localities. Like 'coupure', liquescence is so fundamental and general a characteristic of neumatic notations that it requires consideration across the boundaries of individual manuscripts: using the teachings of late antique grammarians, Andreas Haug has attempted to clarify the nature of textual situations in which liquescence appears.[261] Liquescence has

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[256] The doctoral thesis of 1963 published as Walter Wiesli, *Das Quilisma im Codex 359 der Stiftsbibliothek St. Gallen. Eine paläographisch-semiologische Studie* (Immensee: Verlag Missionshaus Bethlehem, 1966).

[257] 'Neumes et rythme'; 'Preuves paléographiques du principe des "coupures" dans les neumes', *EG* 4 (1961), 43–54; 'Sémiologie grégorienne'. See also the list of Cardine's publications by Ferretti. On *coupure*, see further below, pp. 248–51 and 330.

[258] Marie-Noël Colette, 'La sémiologie comme voie d'accès à la connaissance de l'interprétation au moyen âge', in Huglo (ed.), *Musicologie médiévale*, 121–28. See also Daniel Saulnier, 'Nouvelles perspectives sur la coupure neumatique', *EG* 40 (2013), 243–52.

[259] Daniel Saulnier, 'Les torculus du Mont-Renaud', *EG* 24 (1992), 135–80; *idem*, 'Les climacus du Mont-Renaud', *EG* 32 (2004), 147–51; Andreas Pfisterer, 'Rhythmische Differenzierung in der französischen Notation', *BG* 41/42 (2006), 211–16.

[260] '"Pes quadratus" und "Pes rotundus" streben ihrer Natur nach auf die zweite Note hin: Die rhythmische Natur des Pes', in Göschl (ed.), *Ut mens concordet voci*, 34–136, at 73; 'Semiologische Bedeutung und Interpretation der "Pes"-Neume', *BG* 2 (1986), 5–25, at 7.

[261] 'Zur Interpretation der Liqueszenzneumen', *Archiv für Musikwissenschaft* 50 (1993), 85–100; see also Johannes Berchmans Göschl, *Semiologische Untersuchungen zum Phänomen der gregorianischen Liqueszenz. Der isolierte dreistufige Epiphonus praepunctis, ein Sonderproblem der Liqueszenzforschung*, Forschungen zur älteren Musikgeschichte 3 (Vienna: Verband der Wissenschaftlichen Gesellschaften Österreichs, 1980); Treitler, 'Reading and Singing', 389–93; and Joseph Kohlhäufl, 'Die Liqueszenz als phonetisches Phänomen (E. Cardine) – Fragen zur Entstehen der (des) Liqueszenz(zeichens)', *BG* 36 (2003), 33–46.

also been examined in relation to semantic meaning.[262] Finally, although not primarily investigating neumatic notations, but nevertheless of enormous significance for the understanding of neumes and perceptions of them, Huglo and Bernhard have written about the names given to individual neumes transmitted in texts copied in the tenth, eleventh and twelfth centuries.[263]

This now vast body of work on individual scribes, notations, and music manuscripts, and on specific graphic qualities of neumatic notations, has received little synthesis that attempts to unite historical and semiological enquiries and conclusions.[264] Yet it has been partially attempted for one particular script type, represented in a very limited number of manuscripts. Palaeofrankish neumatic notations, brought into discussions of early notations by Handschin and Jammers in the early 1950s, have stayed at the forefront of historical studies of early medieval neumatic notations ever since – and, despite the lack of sources, there has been some palaeographical and semiological study also.[265] The debate begun in the 1950s about whether the Palaeofrankish notation script represents the first invented in the early Middle Ages has, in a sense, gone quiet: many writers have accepted Handschin's view that these are the earliest type of neumes. Stäblein went so far as to work out in detail a developmental scheme, moving from Palaeofrankish notation – which he dates in his diagram as 'nach (um?) 800' – through 'Breton' notation, dated 'nach 850', to other notation families.[266] But neither Stäblein nor Hourlier actually explained why they considered the Palaeofrankish neumes to be the earliest.[267] The demonstration or rejection of this hypothesis on palaeographical grounds remains a significant desideratum of studies of Carolingian notations.

Since the early 1980s the most prominent studies about (or involving) early medieval notations have not been primarily palaeographical in nature: yet the questions they have raised are of the foremost interest, in terms both of palaeography as a basis for historical enquiry and of how early medieval notations can be situated in relation to particular times

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[262] Dirk van Betteray, *Quomodo cantabimus canticum domini in terra aliena. Liqueszenzen als Schlüssel zur Textinterpretation: eine semiologische Untersuchung an Sankt Galler Quellen* (Hildesheim and New York: Georg Olms, 2007).

[263] Michel Huglo, 'Les noms des neumes et leur origine', *EG* 1 (1954), 53–67; Michael Bernhard, 'Die Überlieferung der Neumennamen im lateinischen Mittelalter', in *Quellen und Studien zur Musiktheorie des Mittelalters* 2, Bayerische Akademie der Wissenschaften, VMK 13 (Munich: Beck, 1997), 13–91.

[264] With the exception of two highly informative but brief studies: Hiley, 'Notation', *NG* 2, and Marie-Noël Colette, 'Élaboration des notations musicales, IXe–XIIe siècle', in Philippe Vendrix (ed.), *Histoire de la notation du Moyen Âge à la Renaissance* (Tours: Minerve, 2003), 11–89.

[265] On palaeographical aspects see Wulf Arlt, 'Anschaulichkeit und analytischer Charakter', 37–40; and 'À propos de la notation "paléofranque". Observations spécifiques et générales extraites de mon carnet d'atelier', *EG* 39 (2012), 51–72; on semiological aspects see Bernardino Ferretti, *Una notazione neumatica della Francia del Nord: saggio critico sulla notazione paleofranca* (Novalesa: Communità Benedettina dei SS. Pietro e Andrea, 2003).

[266] Stäblein, *Schriftbild*, 27.

[267] *Ibid.*, 28–9; Hourlier, 'L'origine des neumes', 359.

and places. It is on entirely non-palaeographical grounds that Palaeofrankish notations have been drawn into one of the most prominent controversies of the last thirty years about early medieval notations.

Stated briefly, Kenneth Levy proposed an explanation for the historical primacy of this type of notation, as one part of a larger hypothesis about the transmission of Gregorian chant in the Carolingian period: he would have this neumatic script invented and in use for the notation of Gregorian chant by circa 800.[268] Like Stäblein (and Hourlier and Huglo in 1957), Levy presented a chronological diagram involving different types of neumatic script, including the Palaeofrankish;[269] but, since the diagram is intended to show a 'three-branch stemma' of the notation of 'Gregorian propers', it was not based on a palaeographical analysis of the various types of notation set out in the diagram, but on a historical investigation of their use. Levy's approach, and reactions to it, need to be considered in the light of views about the purposes and uses of music notations.

Before Corbin's palaeographical studies presented in her 1957 thesis, it had simply been assumed that music scripts existed – at that point in history when modern scholars could first see them, the ninth century – primarily for the purpose of notating the melodies of Gregorian chant: discussion of the before and after, and of the nature of the origins of music script, always referred to ecclesiastical musical practice. When Corbin attempted to establish a chronological framework for the earliest extant examples of notation, she was not aware of any examples of Gregorian chant sung by schola or cantor notated before circa 900: what sat before her were additions made to books for priests, or in a collection of songs, or for passages of the *missa graeca*.[270] Jammers took the implications of this work on early sources seriously, and followed it up in two separate ways, first, by adding to the number of early examples known to musicologists (and consulting Bernhard Bischoff, through whom he became aware of more),[271] and second, by refining the implied results. He proposed that the fact that the extant examples on which Corbin's argument depended provided music notations not intended for the use of cantors did not in itself indicate that music script was invented for other purposes (than notating ecclesiastical chant): 'thus these additions are less a witness for the genesis of neumatic script, than for the penetration of knowledge of [music] script in circles beyond the profession of cantors'.[272]

From this point, discussions about purpose developed two branches of argument: on the one hand, directed to actual examples, their dating and their use and, on the other hand,

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[268] 'On the Origin of Neumes', *EMH* 7 (1987), 59–90; rep. in his *Gregorian Chant*, 109–40.

[269] *Ibid.*, 118.

[270] Corbin, *La notation musicale neumatique*, II, 649, where she lists the manuscripts.

[271] See above, p. 36.

[272] Jammers, *Tafeln*, 27: 'So sind diese Nachträge weniger Zeugnis für die Entstehung der Neumenschrift, als für das Vordringen der Schriftkenntnis in Kreise außerhalb der Kantorenschaft.' That Jammers persisted in arguing that Western neumatic scripts were developed from Byzantine models did not impact on the continuing debate about use.

exploring models of transmission. Although constantly threaded through each other, the separation of these two branches helps to clarify the weight of the arguments and to expose the extent to which purely palaeographical study became neglected or misdirected. The transmission of ecclesiastical chant had already emerged in the 1950s as a central issue in the history of 'Gregorian' chant.[273] By the 1970s, much thought had been given to a previously uninvestigated possibility, that the complex melodies sung by the cantor and schola – thus by what were effectively professional singers – might be transmitted through ear and repeated practice (aurally/orally). This possibility was first fully brought into the open in a study by Leo Treitler published in 1975: in his 'Homer and Gregory', Treitler set out to test Gregorian models against what the results of an oral transmission might be conceived to be.[274] After this a series of studies by Treitler and by Helmut Hucke proceeded to work out the implications of oral transmission, both musically and in relation to historical context: in 1980 Hucke would write 'The chant books which the Romans sent to France at the request of the Franks must have been chant books without neumes', and 'The manuscripts with neumes represent only a second stage of propagation of chant in the Frankish Empire and beyond its limits.'[275] Another possibility, that the transmission of chant melodies in the Frankish Empire depended on musical material recorded in writing, had been upheld in 1975 by Stäblein: 'In order to preserve the new melodies, especially if the oral instruction by Roman cantors ceased, an obvious and natural step was taken. The movement of notes – which had until then been drawn in the air with the hand (to support the memory of the people present singing) – was now written on parchment . . . The first music script was created.'[276]

It was essentially this same hypothesis, although with a French flavour, that was proposed by Kenneth Levy in 1987, bringing together ideas about 'the early history of neumes, the symbiosis of oral and written practice, and the genesis of the Old Roman and Gregorian melodies'.[277] Using comparative studies of chants as transmitted in different European music dialects and liturgical traditions as the basis for his arguments, Levy wrote 'In my view, the neumatic notation is likely to have been employed during the later eighth century in effecting the changeover from Gallican to Gregorian musical repertories and the

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[273] See above, pp. 43–4.

[274] 'Homer and Gregory: The Transmission of Epic Poetry and Plainchant', *Musical Quarterly* 60 (1974), 135–208; rep. with a new introduction in his *With Voice and Pen*, 131–85.

[275] Helmut Hucke, 'Toward a New Historical View', 448, 466.

[276] Stäblein, *Schriftbild*, 28: 'Um die neuen Melodien . . . festzuhalten, besonders wenn die mündliche Unterweisung durch römische Kantoren aufhörte, tat man einen sehr naheliegenden und natürlichen Schritt. Man schrieb die bisher mit der Hand zur Unterstützung des Gedächtnisses der auswendig Singenden in die Luft gezeichneten Tonbewegungen nun auf das Pergament . . . Die erste Notenschrift war geschaffen.' On the development of ideas about cheironomy before Stäblein, see Michel Huglo, 'La Chironomie médiévale', *RM* 49 (1963), 155–71; for a dissenting view, see Helmut Hucke, 'Die Cheironomie und die Entstehung der Neumenschrift', *Die Musikforschung* 32 (1979), 1–16; *idem*, 'Toward a New Historical View', 449.

[277] 'Charlemagne's Archetype of Gregorian Chant', 30; rep. in his *Gregorian Chant*, 108.

authoritative neumation of the Gregorian propers . . . would be a fruit of Charlemagne's Carolingian renaissance.'[278] With such statements as those of Stäblein and Levy – which do not contradict the older view that notation was either invented *for* the notation of Gregorian (Roman-Frankish) chant, or, at the very least, closely associated with it – our attention is refocused on the purposes and uses of music notations. By the time Levy's 'Archetype' was written, Hucke had already affirmed two years previously 'neumes . . . were evidently not invented in order to fix Gregorian chant in writing'.[279]

These positions were diametrically opposed and, by now, rigidly upheld: whether Gregorian chant was notated circa 800 or not until circa 900 became a crucial issue. Writing a response to Levy's 'Archetype' study in 1988, Treitler usefully laid out two reasons for his own views about the date by which the Gregorian mass propers (thus the most complex Gregorian melodies) had been notated: since he considered neumatic notations to have been both in 'semiotic principle and palaeographic form' dependent 'on the Carolingian system of punctuation', this would suggest a '*terminus ante quem non* for the invention of the neumes . . . toward the end of the 8th century';[280] in turn, he proposed that chants for the cantor and choir would not have been written down 'immediately upon the invention of the notation system', and, hence, 'a fully neumated Mass proper' could not have been 'in circulation as early as 800'.[281] With his second reason, Treitler returned to the issue of transmission, citing 'a series of indications that the performance of the Mass propers during the 9th century was based on an oral tradition'.[282] To what extent his comment 'perhaps we could agree to split the difference by adopting Michel Huglo's suggestion of a terminal date of mid-ninth century'[283] was to be taken seriously is hard to tell: another nine pages are devoted to rejecting Levy's hypothesis for a written (musical) archetype in the early Carolingian period.

What becomes very noticeable in the exchanges between Levy, Hucke and Treitler is the extent to which they all depended on Corbin's dating and placing of early notated manuscripts, thus based on study carried out in the 1950s and little revised in her 1977 *Die Neumen*; although Jammers's work was periodically cited, it seems generally to have been Corbin's tightly drawn restrictions limiting extant early notations to priests' rather than cantors' chants that provided a foundation for the 'circa 900' arguments, and which were fully

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[278] *Ibid.*, 107.

[279] Hucke, 'Die Anfänge', 274: 'die Neumen . . . sind offenbar nicht zum Zweck der schriftlichen Fixierung des Gregorianischen Gesangs erfunden worden'.

[280] Leo Treitler, 'Communication', *JAMS* 41 (1988), 566–75, at 566.

[281] *Ibid.*

[282] *Ibid.*

[283] *Ibid.*, 567. I note that in 1987 Huglo made a different statement: in 'La notation wisigothique' (19) he allows that 'the origins of neumatic notation' may be situated 'shortly after 800', but that 'notation of the full repertory of Gregorian chant *in different kinds of notation* [my emphasis] was not accomplished until *circa* 900'; by using this later boundary he provided a precise description of the extant notated manuscripts.

acknowledged by Levy also.[284] Certainly, Hucke and Treitler were aware of the need for new palaeographical work on the early manuscripts, but it seems not to have been easily achievable in the 1980s.[285] In another way also these discussions drew in a view of extant manuscripts that depended on musicological assumptions more than on palaeographical and codicological study: this was the argument that 'the existence of several 9th-century books of texts of the sung parts of the Mass, without neumes, from important liturgical centres . . . makes it seem unlikely that there were notated cantor's books at this time'.[286] That such books might have been made alongside notated books, but for different purposes, seems not to have been envisaged; even the unusually high grade of some of these books in relation to later notated books used by cantors did not raise suspicions. Yet the mid-ninth-century Monza cantatorium is an example of a chant book made in purple and gold, while the Compiègne Gradual and antiphoner (BNF lat. 17436) was made alongside other books by the court school of Charles the Bald, with large and very fine coloured initials, broad margins and gold letters for rubrics and the opening of every chant text. Had those unnotated books been drawn more into the debate, those ways in which they represent a written transmission of chant could also have been more thoroughly considered.[287] Although, in musicological studies of early medieval music, a forceful debate about orality and written materials was well under way in the 1980s, it was not the surviving records – books and notations – that sat at the centre of that debate but the melodies of Gregorian (or 'Roman-Frankish') chant.

Nevertheless, the relation between early types of music script in addition to the identification of a possible earliest script were still latent issues in these discussions. In Levy's hypothesis about a nexus of issues – the early history of music notation, the mechanics of transmission, the geographical and historical context to which the chant melodies actually notated in extant books can be traced – Palaeofrankish notation had emerged as a possible candidate for the earliest music script. This led him to try to fix a date for the momentous

[284] Treitler, 'Reading and Singing', 416 (but see also 388, where Jammers is credited with having introduced this idea); Hucke, 'Anfänge', 272–4 (although incorporating clm 9543, as proposed by Jammers); Levy, 'Charlemagne's Archetype', 82.

[285] See Hucke, 'Toward a New Historical View', esp. 446 n. 51.

[286] Hiley, 'Notation, §III, 1: Western, Plainchant', 345; the first appearance of this argument is in Helmut Hucke, 'Der Übergang von mündlicher zu schriftlicher Musiküberlieferung im Mittelalter', in Daniel Heartz and Bonnie Wade (eds.), *Report of the Twelfth Congress Berkeley 1977, International Musicological Society* (Kassel: Bärenreiter, 1981), 180–91, at 187–8; see also Hucke, 'Anfänge', 274–5.

[287] On this see Susan Rankin, 'The Making of Carolingian Mass Chant Books', in David Butler Cannata, Gabriela Ilnitchi Currie, Rena Charmin Mueller and John Louis Nádas (eds.), *Quomodo cantabimus canticum. Studies in Honor of Edward H. Roesner* (Middleton, WI: American Institute of Musicology, 2008), 37–63; *eadem*, 'Beyond the Boundaries of Roman-Frankish Chant: Alcuin's *de laude Dei* and Other Early Medieval Sources of Office Chants', in Michael Scott Cuthbert, Sean Gallagher and Christoph Wolff (ed.), *City, Chant, and the Topography of Early Music*, Isham Library Papers 8 (Cambridge, MA: Harvard University Press, 2013), 229–62; and Daniel J. DiCenso, *Sacramentary-Antiphoners as Sources of Gregorian Chant in the Eighth and Ninth Centuries*, PhD thesis (University of Cambridge, 2012).

step taken to record musical sound in writing, and he provided a broad estimate: 'neumes may reach back to Gregory the Great or farther, but they are likely to be a Frankish or cooperative Roman-Frankish innovation of the 760s or 770s'.[288] It also led him into consideration of that oldest of palaeo-musical quandaries, the origins of neumatic notation. The essence of Levy's theory about neumatic origins and the development in the Carolingian period of other ways of writing neumes is to divide 'neume history' into 'two distinct developments': 'an earlier one of … graphic neumes whose aim was to describe pitch positions' and 'a later one of … gestural neumes whose aim was to describe intervallic flow'.[289] For these 'graphic neumes' he could propose Palaeofrankish script and by 'gestural neumes' he designated all the other 'conjunct and disjunct neume species', thus all the regional scripts recognized as being in place by circa 900.[290] This division between Palaeofrankish script and all other known neumatic scripts depended on simple palaeographical observations of the basic signs for one note, two notes (rising, falling) and three notes (a rise followed by a fall, a fall followed by a rise). This led to the declaration that the Palaeofrankish notation 'is the symptom of a quite different process' of 'relationship between sound and sign' to all the other notations,[291] using fewer pen movements and more concerned with 'pitch-position' than with 'representations of melodic flow'.[292] But these claims about the relation of the different neumatic scripts were arrived at through reasoning based mainly on melodic transmission and comparison, on 'liturgical and repertorial considerations',[293] and through an attempt to imaginatively think through the various steps of a process of moving from the invention of neumes to the full notation of Gregorian (or 'Roman-Frankish', or 'Carolingian') chant. The amount of palaeographical examination involved was minimal, using models of basic signs from only two music script types (without reference to named and dated manuscripts). Thus, the proposition that the various neumatic scripts that can be seen in notations surviving from circa 900 can be historically systematized in two stages awaits a sustained palaeographical examination.

Palaeographical reasoning has been more prominent in the work of the scholar who has written by far the most on the subject of the origin and early history of early neumatic script in the years since 1950.[294] It was not the history of Gregorian chant, and thus the interaction of different melodic traditions or liturgical uses, that provided a starting point for Treitler's enquiries, but 'the evolution of a literate musical culture in the Middle Ages'.[295] Therefore

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[288] Levy, 'On the Origin', 139.

[289] *Ibid.*, 139.

[290] *Ibid.*, 118 and 139.

[291] *Ibid.*, 126.

[292] *Ibid.*, 125, 127.

[293] *Ibid.*, 117.

[294] That is, leaving aside Floros's *Universale Neumenkunde*.

[295] Treitler, 'Communication', 567.

his studies focused more directly on the issue of writing, on those ways in which notations represented musical sounds and on sign systems that might have served as models for musical signs. Those models he discussed at length included grammatical accents and Carolingian punctuation systems; indeed, he argued strongly for abandonment of the former in favour of the latter. His discussion of the 'accent theory' of origin begins, as do all, from Coussemaker's claim made in 1852, but it then builds heavily on a palaeographical assertion that that same group of music scripts that were thought to have been derived from prosodic accent signs actually depend on the differentiation of *punctum* and *uirga* neumes, a fact entirely inconsistent with accent signs (which have no physical model for the simple *punctum*).[296] Setting this theory aside as a 'keystone in a comprehensive view that is false' (neumes are of antique origin and were used to record the pitches of plainchants which were always written down),[297] he explored the ways in which punctuation signs were used by the Carolingians, the forms of certain punctuation signs, and those ways in which music notation and neume forms might be associated with these writing practices,[298] eventually concluding that 'the earliest neumatic writing in practical sources is associated with the function and forms of punctuation'.[299] This was only one part of a wider consideration of Carolingian script culture, a background against which Treitler was then able to characterize music writing as 'associated with the normalization of the Latin language and its script, with the spread of writing and literacy, and with language-pedagogy'.[300]

Treitler's methodology for a semiological examination of those ways in which music writing represented musical sounds was also based on palaeographical data, using a table of neumes 'which is basically that of Corbin (*Die Neumen*)'.[301] Yet here, as in the consideration of neume shapes in relation to punctuation, the forms of neumes on which the discussion rests are not directly drawn from named and dated manuscripts,[302] but from some sort of synthesized collective idea: within that collective idea are included different instances of regional neume types (as represented in the different horizontal lines in the table) and notations written in rather different periods (from the late ninth to the late eleventh centuries). That is a curious quality in an otherwise extremely careful analytical discussion, and it undermined one of Treitler's objectives, to examine early music writing through Charles S. Peirce's semiotic categories of 'iconic', 'symbolic' and 'indexical'. Ultimately, it would have been possible to determine to what extent any one of the script types, described in a general way, was balanced towards iconic or symbolic modes of reference; but the wide historical framework that provided the basis for this study would not permit any closer

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[296] Treitler, 'The Early History', 338–9, 359–64; 'Reading and Singing', 405–9 and 410–23.
[297] Treitler, 'Reading and Singing', 405.
[298] *Ibid.*, 405–23.
[299] *Ibid.*, 426.
[300] *Ibid.*, 426.
[301] Treitler, 'The Early History', 336–7.
[302] With some exceptions in discussion of the *quilisma*: see Treitler, 'Reading and Singing', 419–20.

judgement about the earliest notations, and about any possible development from an iconic to symbolic (or symbolic to iconic) procedure. Of course, Treitler's endeavour to find a method to understand early neumatic notations historically without depending on detailed palaeographical study is entirely comprehensible: it had been his and Helmut Hucke's wish in the mid-1980s to make a catalogue of and study all ninth-century examples of notation. This proved impossible, given the difficulty of gathering detailed palaeographical information about manuscripts at that time.

The treatment by music theorists of music notation, above all in the *Musica enchiriadis* and in Aurelian of Réôme's *Musica disciplina*, provided Treitler with a basis for arguing that in the mid-ninth century chant remained an oral tradition, and that Aurelian wrote for 'singers in an oral tradition'.[303] Since the earliest surviving source of Aurelian's treatise (Valenciennes BM 148, fols. 58r–89r) includes several passages notated in Palaeofrankish neumes, he needed to explain what such a form of music writing was doing in such a treatise. This was managed by contrasting two kinds of notation: Aurelian's use of notation was seen as drawing attention 'more forcefully to the contrast between the use of a simple pitch notation to point to a few melodic details, and the use of a full system of neumes in the service of a performance practice'.[304] Hence, whatever their disagreements, and however contrasted their modes of arrival at conclusions, both Levy *and* Treitler divided Carolingian music writing into at least two stages (Levy), or a developmental spectrum (Treitler). It is a central aim of this current study to be able to trace a passage through that developmental spectrum more clearly. This will necessitate evaluation of Treitler's claim that 'the earliest specimens of music-writing represent more or less the beginning of the practice',[305] an evaluation that will have to depend both on comparative palaeographical study of notations and on as solid an assessment as can now be reached of the dating of extant early examples of music notation.

As the neumatic notations written at Sankt Gallen dominated late nineteenth- and early twentieth-century consideration of early medieval music notations, so has another type of notation – the Palaeofrankish – monopolized their discussion since the 1980s. Not only has this notation been crucial to Levy's Archetype hypothesis and to Treitler's explanation of the progress of a developing musically literate culture in the ninth century, but it has also been a significant element in the examination of notations used or referred to in ninth-century treatises of music theory. The importance accorded both to Aurelian's use of notation and to those neumes that probably represented the forms he himself wrote (or read) underlies the concentration on them in a series of studies by Charles Atkinson.[306] In these studies,

[303] Treitler, 'Reading and Singing', 372–89.

[304] *Ibid.*, 161.

[305] *Ibid.*, 195; Treitler, 'Communication', 567.

[306] Charles M. Atkinson, '*De accentibus toni oritur nota quae dicitur neuma*: Prosodic Accents, the Accent Theory, and the Paleofrankish Script', in Graeme M. Boone (ed.), *Essays on Medieval Music in Honor of David G. Hughes*, Isham Library Papers 4 (Cambridge, MA: Harvard University Press, 1995), 17–42; *idem*, 'Glosses on Music and Grammar and the Advent of Music Writing in the West', in Sean Gallagher (ed.), *Western*

Atkinson has reversed the Treitlerian denial of the relevance of accents to discussion of neumatic origins by demonstrating a 'link between prosodic accents and the musical gestures of the chants Aurelian uses as examples'.[307] Indeed, he has been able to demonstrate that Palaeofrankish notation corresponds 'to the prosodic accents Aurelian discusses'.[308] Atkinson's study of Palaeofrankish neume forms and their relation to Aurelian's text is based on identified examples, notated in the late ninth and early tenth centuries, thus as close as possible to the composition of Aurelian's text, without depending on the neumes in Valenciennes 148 (which Aurelian might or might not have been connected with). Accents have therefore been quickly restored to the heart of debates about the origins of neumatic notations.

The juxtaposition of Levy's, Treitler's and Atkinson's studies of the origins of music writing and early history of notations underlines the extent to which such investigations need to consider many layers of information and contexts. The studies of these scholars, however separated in method, have refined questions surrounding the origins of neumatic notations immeasurably: many confusions have been resolved, and the nature of the questions that remain (and which are difficult to answer in view of a lack of surviving manuscripts) are more clearly outlined. Among the many questions raised here, it is hoped that many will be answered in the following pages; yet, 'the possibility of a qualitative leap into writing' – as the shift from an entirely unwritten practice to one employing new techniques to render some elements of sound in writing has been described by Arlt[309] – will surely remain intangible, beyond our historical imaginings.

Plainchant in the First Millennium: Studies in Medieval Liturgy and its Music in Honor of James McKinnon (Aldershot: Ashgate, 2003), 199–215; *idem*, *The Critical Nexus: Tone-System, Mode and Notation in Early Medieval Music* (Oxford University Press, 2009).

[307] Atkinson, *The Critical Nexus*, 104.

[308] *Ibid.*, 106.

[309] Arlt, 'Anschaulichkeit und analytischer Charakter', 29; translation by Treitler, 'The Early History', in *With Voice and Pen*, 318.

3

Music Notations 800–900: The Evidence

3.1 BEFORE AND AFTER: WRITING MUSIC

To move from a culture of writing in which the sound of those who sing was experienced in the moment of hearing, but represented in writing only in the form of the words sung, to one in which a highly developed system of graphic marks could be used to represent musical sounds was surely a big jump. Such change must have involved many stages of thought, layers of experience and different kinds of trials. It was necessary to consider how a reader would make sense of a new register of visual signs and to decide which elements of sound should be graphically represented; at an abstract level, graphic signs needed to be devised and (presumably) developed beyond their first state; also at an abstract level those ways in which recognized musical gestures would be represented by those signs needed to be formalized, agreed and recognized by a large enough community of users to ensure the continuing practice of the new graphic system beyond the circle in which it was first conceived. In these general senses, the spread of a new kind of literacy established somewhere in Western Europe in the early ninth century was evidently highly successful: by the end of the century ways of writing graphic marks for music had been worked out in several different complex and refined graphic systems. On more specific levels, the musical content of what was to be recorded in writing might have required the support of more than individual, scattered, cantors: the status of writing in the Carolingian period is such that we could not expect a notation of a Gregorian chant to represent anything highly individualized and recognizably different from the expectations of trained singers. Finally, and again, on a specific level, the consequences of these new graphic techniques for the writing and codification of musical repertories needed to be understood by the scribes who would be responsible for handling large musical copying tasks, not all of whom may have been cantors.

Seen from the vantage point of what came before, the collection of musically notated material in books thus appears as a desired end, the culmination of much effort, an achievement dependent on more than one generation of literate musicians. While it is easy to understand why modern musicological studies have regarded examples of ninth-century notation as marking a beginning, indeed sometimes describing them as 'primitive', such attitudes fail to recognize the enormity of the move from unwritten to written practices

and the changes of consciousness this move would engender. What is seen in the well laid out and detailed notation of a gradual made at Laon in the last quarter of the ninth century should be recognized not as a beginning but as the fruit of a long period of development.

Much of the detail of these graphic designs, ways in which they were developed and changes of manner of use, reflecting changes of consciousness, will be explored later in this book. First, in order to shape our perceptions of the nature of the changeover from unnotated to notated books, a comparison between two manuscripts, one made 'before' and one 'after', will be made. In the first, made circa 830, the melodic component of the chant was not independently represented in writing, while in the other, made in the last quarter of the ninth century, the chant melodies have a full, detailed music notation. This raw demonstration of what routinely came before musical literacy and what routinely came after will help to separate the diverse strands of writing technique involved in the changeover.

A single bifolium from a gradual prepared in southern Germany circa 830 survives as the binding around Augsburg Stadtsarchiv Kloster Holzen MüB Literalien 104.[1] The same scribe has been identified copying four pages in a theological collection. Isanbert, monk of Fulda and close friend of Hrabanus Maurus, also wrote extensive passages in that collection,[2] leading Bischoff to place the gradual scribe in a circle connected with Isanbert. The liturgical content of the gradual bifolium does not allow closer identification of the place of origin.

In these four pages are contained the full texts or incipits of Proper chants for saints' feasts (from St Theodore, 9 November, to the end of the liturgical year, St Andrew, 30 November) and for the first to eighth Sundays after Pentecost; only once is an Alleluia included.[3] Although severely trimmed along the bottom edge, and thus losing the lower ruled line, much of the text content of the last line on each page can be reconstructed quite easily, matching what is visible with what is likely to have been written. Music notation has been added to several passages, but is certainly not original, and may date from as late as the eleventh century. On pages measuring 230 × 170 mm, the ruled space can be measured as 215 × 140 mm, with twenty-six lines. The main script is an early Caroline minuscule, using many ligatures and abbreviations, with rubrics in uncials; the main punctuation sign is made using three points in a triangular configuration, and occasionally a single point appears (within texts). With occasional infill of uncial letters using red, green or yellow washes, but no other

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[1] On this fragment, see Alfred Schröder, 'Bruchstück eines Mess-Antiphonars aus dem neunten Jahrhundert', *Archiv für die Geschichte des Hochstifts Augsburg* 6 (1929), 795–806; Bischoff, *Schreibschulen*, I, 54, and II, 205; *BK* II, no. 2903 (under Munich).

[2] ÖNB lat. 966; see Bischoff, *Schreibschulen*, I, 232 and II, 242. On the passage written by the scribe of the gradual little appears to be known.

[3] On fol. 1v, ll. 14–15: *Alleluia V. Nimis honorati sunt*, for the feast of St Andrew.

decoration, and written on a thick and rather yellow parchment, it is evident that this bifolium comes from a codex prepared more for use than for show.

The famous Gradual Laon Bibliothèque municipale 239 may have been made within fifty years of the German book. Laon 239 is now the earliest extant fully notated and almost complete gradual: on palaeographical grounds both Bischoff and Contreni have dated it in the ninth century.[4] As a book with one full-page Franco-Saxon decorated A at its beginning,[5] but thereafter large square capitals for the beginning of each set of Propers (1½ lines), and smaller capitals (1 line) for the beginnings of individual chants, it is not a grand book either, but one meant for daily use by a cantor.[6] Here the main script is a small Caroline minuscule, with rubrics in rustic capitals, written in red ink. The pages measure 225 × 145 mm, with a ruled space of 160 × 130 mm, and thirteen lines per page.

As material for comparison, I have chosen to use fol. 2r of the German fragment (Figure 2).[7] The equivalent passage in Laon 239 is on fols. 75r (l. 10)–76r (l.3, halfway along); fol. 75v is shown in Figure 3.[8] A useful place to start the comparison is with the Introit antiphon *Respice in me* (Augsburg 104, fol. 2r, l.8; Laon 239, fol. 75v, l.2). In the German gradual fragment this follows the indication 'EBDOMADA.III.', and in Laon 239 'DOM*INICA* III POST PENTECOSTE*N*'. In the fragment we see the text set out like this:

> A R espice in me et miserere mei · d*omi*ne quo*niam* unicus et pau
> p*er* sum ego uidehumilitate*m*meam et laborem meu*m*[9] et dimit
> te om*ni*a peccata mea d*eu*s m*eu*s : PL · Ad te d*omi*ne leuauianima*m*

In Laon 239 the text is set out like this:

> Respice in me etmisere re mei domi ne quo niamunicus & pauper
> sum e go uide humi litatem me am et la bo rem me um etdimitte
> omnia peccata me a deus me us PSL Adte d*omi*ne leuaui

In both cases, we see the work of experienced scribes, aware of certain basic rules about good text presentation, yet the need for the text scribe of the Laon page to organize the layout of individual text syllables is striking. The German scribe could play with spacing between words in order to get a certain amount of text onto each ruled line, while making a tidy, reasonably aligned effect at the end of each line: thus the clear word spacing of his first line is

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[4] John J. Contreni, *The Cathedral School of Laon from 850 to 930. Its Manuscripts and Masters*, Münchener Beiträge zur Mediävistik und Renaissance-Forschung 29 (Munich: Arbeo-Gesellschaft, 1978), 161 n. 18; *BK* II, no. 2094 ('wohl 4. Viertel').

[5] See Fabrizio Crivello, 'High-Grade Manuscripts and Neumatic Notation', *EG* 40 (2013), 213–24.

[6] That is the justification for the nature of its notation: see Colette, 'Élaboration', 54, and Marie-Noël Colette, description of the manuscript at http://bibliotheque-numerique.ville-laon.fr/.

[7] None of the musical notation on this page is contemporary.

[8] The full manuscript can be seen at http://bibliotheque-numerique.ville-laon.fr/.
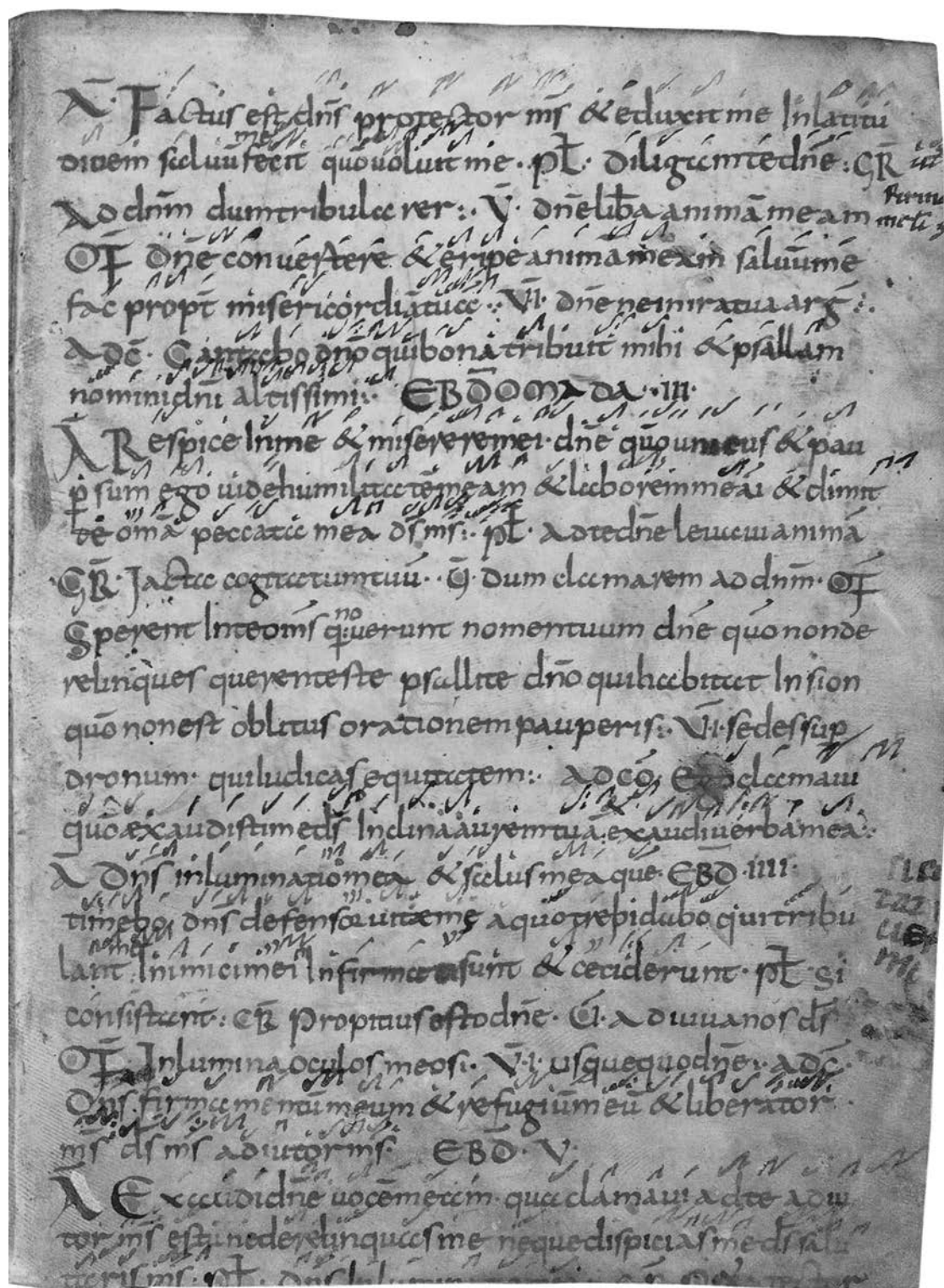
[9] 'a' corrected to 'u*m*'.

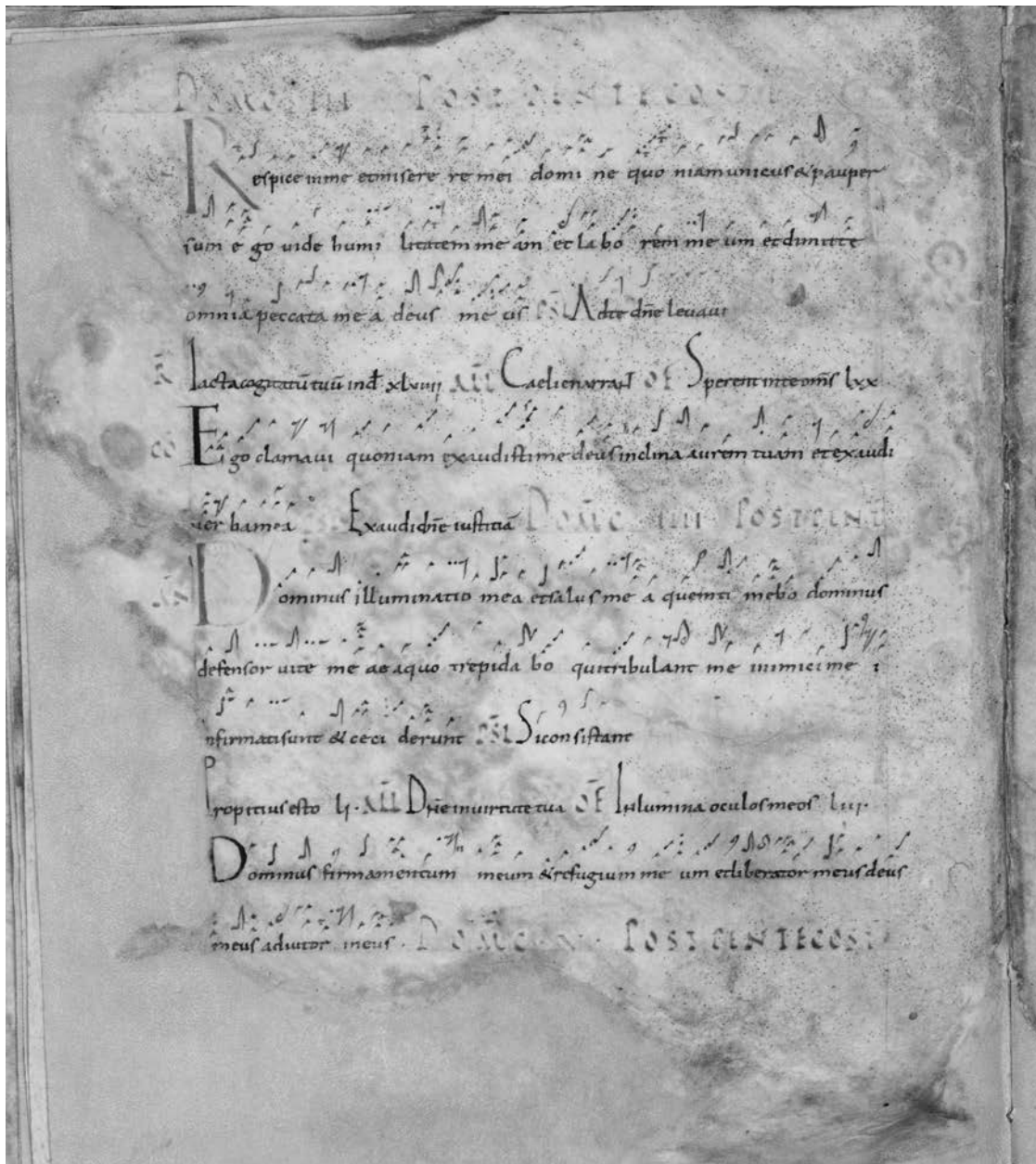**Figure 2** Augsburg, Stadtsarchiv Kloster Holzen MüB Literalien 104, binding, fol. 2r.

Figure 3 Ville de Laon, Bibliothèque municipale ms 239, fol. 75v.

abandoned in the second, with the three words 'uide humilitatem meam' joined. Such choices were not available to the Laon scribe, who had to be primarily guided by the amount of horizontal space required by the music notation: the space between *mei* and *domine* had to be greater than he usually allowed between words, because of a long passage of neumes; so also in the middle of *humilitatem* and *laborem*, and at the end of *deus*. Indeed, this is a text

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layout that would have been difficult to get right working with only a mental image: it may have been prepared, either through writing out practice versions (on wax tablets or stray parchment scraps) or – as I think must by the time of preparation of the Laon Gradual have been the case – used a good exemplar.[10] In the case of long melismas in chants such as Alleluias, the demands made of the text scribe were at their most extreme – as can be seen on a page from the Alleluia repertory at the end of Laon 239 (fols. 83v–88v).[11] That the spacing occasionally went wrong is also clear: on fol. 76r l.9 the text scribe evidently wanted to get *tuos* onto the end of this line, allowing the music scribe to use the right-hand margin for a long melisma, and thus misjudged the spacing between *domine* and *aliquantulum*, setting up a different problem for the music scribe. But the comparative rarity of such problems encourages the argument that there was a depth of planning behind this extremely careful layout. It is also worth noting that the Laon text scribe was much more solicitous than the German scribe to finish full words at the end of lines: this habit can be widely observed throughout the codex. On fol. 75v this had the effect of taking the ends of some lines well into the margin (l.6 *exaudi*; l.12 *deus*).

Besides the spacing of syllables, the other most significant alteration of practice in relation to text is the general abandonment of abbreviations: these are present in eight out of twenty-six words in the antiphon text in the German fragment, and in none in Laon (within the antiphon). Only when he wrote the psalm incipit after the antiphon did the Laon text scribe allow himself an abbreviation (*dne*); although there are neumes here, they are not by the main scribe. Elsewhere in the codex, these psalm incipits are often without notation, indicating that the original plan did not involve notation of psalm tones for Introit psalm verses. Abbreviations would always engender problems in a text intended for music notation: as a scribal practice they simply had to be abandoned. The effects of their becoming unavailable to text scribes producing books for music notation are quickly discovered, since abbreviations represent an aspect of manipulation of text that allows a scribe to produce a tidy visual image over the whole page (whether or not that was the main reason for the use of abbreviations). Thus, on the last line of fol. 75r in Laon 239, where the text scribe wanted to write the whole of the Communion *Cantabo domino*, allowing him to begin the new page on the verso with a full line rubric, he was relatively ungenerous in his spacing along the line (the neume group for *domino* is over *qui* and so on); once he got to *domini*, he was in trouble, and was forced to continue the last word *altissimi* into the margin. Such problems would never beset the German scribe.

Two other aspects of text presentation relevant to a comparison are the use of ligatures and of punctuation. The German text scribe used more punctuation than the Laon scribe, not

[10] It is unusually easy to argue such a case for this particular book, since fragments of three other graduals notated in the same script, made in the same period and following substantially the same textual and melodic readings, survive in Laon: see Table 4 on p. 105.

[11] In the facsimile published in 1909 (*PM* 10), a scrap from a further folio containing Alleluias can be seen following fol. 88v, but this is not now present in the manuscript or reproduced on the website.

only the definitive triangular set of dots at the ends of chants (fol. 2r, l.3, after *tribularer*; l.15 after *equitatem*, and others) but also a single high point for intermediate phrase endings (fol. 2r, ll.14–15: *Sedes super thronum · qui iudicas equitatem*: l.24: and *Exaudi domine uocem meam · qua clamaui ad te . . .*). The only place where the Laon scribe uses points is within passages that are not sung, thus rubrics of one kind or another (fol. 75r, l.9 : *DOMC. II. POST PENTECOST.* and l.12 *lij.* refering to the mass in which the gradual that this indication follows is fully notated). Given the relation between punctuation and reading well, it is likely that scribes, knowing that the text they were writing out would not be read from, but sung from, could quietly drop an unnecessary practice.

With ligatures between letters the situation is surely more complex. The extensive use of ligatures was already in decline when the German scribe was at work: on fol. 2r there are only two, both at the end of the last line (*Protector* for the Gradual *Protector noster*), evidently introduced here by the scribe in order to fit that word in before the end of the page, so that he could begin on the verso with a new chant (*OF Benedicam dominum*). There is a strong impression, then, that this scribe is actively avoiding using ligatures, although he is perfectly aware of the option. Nevertheless, his repertory of ligatures in this gradual fragment includes ae, ct, et (often included within words), nt, or, ra, re, ro, rt, st, ti – a set of ligatures that exactly matches that of the other example of his work (ÖNB lat. 966, fols. 59r–61v). He was even prepared, on more than one occasion, to use a ligature to form the end of one word and the beginning of another – and this in the Augsburg gradual fragment rather than the Vienna theological text (fol. 1r, l.1 – *uirtutetua*; fol. 1r, l.13 – *mandatistuis*; fol. 1r, l.16 – *pulchritudinetua*; fol. 1v, l.19 – *salutaretua*)! That use of ligatures would have been unacceptable practice for any text scribe writing out text that was to be neumed, not only on the grounds of clarity but also because of the basic and universal quality of neumatic notation, that is, that it was tied to individual syllables: if the text could not show division between the syllables, the neumes could not be clearly placed. The comparison of these two manuscripts throws into relief the extent to which the inclusion of music notation necessitated a complete alteration of script practices for text scribes, quite apart from the need for competent music scribes: far from simply adding graphic marks for music above chant texts written out as they had been since the mid-eighth century, text scribes for music books had to respond to new demands. None of what they were now expected to achieve was difficult, but they would have to depend on well-made exemplars in order to be able to judge a useful spacing of syllables. Perhaps less demanding were the requirements made of ruling and overall space. It was possible to write out neumes using a ruling that differed little from what was needed in a book ruled for an uncomplicated text: the main requirement would be greater vertical space between the writing lines. In this sense, the juxtaposition of the German fragment with the Laon book produces an interesting result. It might have been expected that the inclusion of a new register of information would require much greater space overall. The 'space' statistics for these two manuscripts show this not to be true. In Table 1 a series of measurements from each manuscript, including the actual space used to write out the same liturgical material (as

Table 1 Spatial measurements in Augsburg 104 and Laon 239.

	Augsburg fol. 2r	Laon 239, fols. 75r l.10– 76r l.3 (middle)
lines per page	26	13
lines to write out this passage	26	19½
distance between lines	8.6 mm	13.3 mm
ruled space (h x w)	215 × 140 mm	160 × 130 mm
area of ruled space per page	30,100 sq mm	20,800 sq mm
area of ruled space for this passage	30,100 sq mm	30,333 sq mm
length of ruled lines for this passage	3,640 mm	2,535 mm

defined above, on the basis of fol. 2r of the German fragment) are compared. From these it can be seen that the larger writing space required in the book organized around the copying of music notation is larger than that used in the German fragment by only a small amount (233 sq mm, or 2 sq cm, on one page of 208 sq cm). In the space compared, the scribe copied the material for four feasts. Since the notation in Laon 239 is not at all squashed, the question arises as to how this was achieved. This can be determined by comparing the length of ruled text line for this passage, shorter in the Laon book in the ratio 7:10. In other words, in Laon 239 the text was fitted onto much less horizontal space than in the German fragment, determining a considerably smaller size of text module, and it is at the expense of the size at which the text was written that the space for neumes has been won. Such comparisons of size and area can hardly be generalized: much will depend on the situation in which a book was being made and the purpose for which it was intended. Nevertheless, the comparison provides a useful basic piece of information, that writing music notation did not automatically double the amount of parchment required.

Other elements of contrast between these two manuscripts are not of especial interest in terms of larger reflections on historical change before and after the advent of music notation in early medieval Europe: the extreme care of the Laon scribes at virtually every level of layout and writing – text and neumes – marks out Laon 239 as a special book, even in its own time. The German fragment appears to represent something more routine.

3.2 BEFORE AND AFTER: READING MUSIC

Making books with music notation required of scribes several new kinds of technical expertise: they must understand the meanings and ways of writing a repertory of musical signs, and they must be able to rule parchment and then set out words in such a way as to sufficiently accommodate musical signs in both horizontal and vertical directions. What then did these new graphic techniques offer to readers? For those concerned with music,

what was the nature of this change, and in which ways was it transformational? A first reflection on these issues can be based on the same material that has been considered from the point of view of preparation, thus what appears on fol. 2r of the Augsburg fragment and the equivalent material in the Laon Gradual. I shall begin as before with the Introit *Respice in me*. As written out in Augsburg, without music notation,[12] the words of the chant were relatively clearly spaced, except for short passages ('uidehumilitatemmeam' and 'leuauianimam'); the numerous abbreviations would have constituted a greater challenge to a reader than the spacing of words. For the text, the reader's task consisted of correctly recognizing the letter forms (including ligatures), then formulating the syllables and words made up by the letter forms, and then understanding the text well enough to be able to make syntactical sense. A reader who was expected to produce a musical delivery of the text would use the words as the starting point for recall, in whatever way that worked. By the time the Augsburg Gradual was made, the classification of each Introit chant into a modal system that determined a specific psalm tone for each mode would surely have been available: it is likely that a musically trained reader would have been able to recognize (or check in another written source) to which mode this Introit belonged (the sixth) and to use that as a support for recall of the melody.

Much of the reader's process of expanding the abbreviations, sorting out the syntax and recalling the melody would have been aided by familiarity; the texts of the antiphon and verse are from the book of psalms, that text which was the first to be memorized by students,[13] and which provided the textual substance of the majority of liturgical chants. Such familiarity must have been a good starting point for delving into the memory, but there were several occasions when the same texts would have been sung in the liturgy, each time in a different manner: a psalm could be sung following a simple repeated melodic formula as part of the weekly cursus of the whole psalter in the office. In that situation the whole psalm would be sung straight through. In other situations parts of a psalm could be extracted and sung in a more elaborate way, as here in one of the Proper chants of the mass. Correct musical recall would therefore depend on being able to separate out different moments of delivery of the same text.

Of course, the reader of the book knew that he/she was looking at chants for the mass, and in this case, at the Introit for the third Sunday after Pentecost. But there are other qualities of the text that could have been noticed by a reader and, in themselves, have stimulated recall. The first of these is the specific way in which a chant was composed of extracts from a text that was sung straight through once a week. In this case the antiphon and verse texts are extracted from Psalm 24, and it is likely that a reader would notice the absence of a verse

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[12] The neumes written on these lines are not original but were entered later.

[13] See Susan Rankin, 'Singing the Psalter in the Early Middle Ages', in Daniel DiCenso and Rebecca Maloy (eds.), *Chant, Liturgy, and the Inheritance of Rome. Essays in Honour of Joseph Dyer* (Woodbridge: Boydell and Brewer, 2017), 271–89.

between 16 and 18, and the return to the beginning of the psalm for the centre of the chant, the psalm verse:

> *Ps 24.16:* Respice in me et miserere mei quoniam unicus et pauper sum ego.
> *Ps 24.18:* Vide humilitatem meam et laborem meum, et dimitte omnia
>   peccata mea.
> *Ps 24.1:* Ad te, Domine, levavi animam meam.
> *Ps 24.2:* Deus meus, in te confido; non erubescam.

Over and above this it is also possible that a reader would notice that the version of the text sung in this chant was not that generally sung in the weekly round of psalm singing, that is, if the Gallican or Vulgate version of the psalter was in use in his/her institution, as became normal in Carolingian Francia.[14] The text version followed in the chant is that of the Roman psalter, and differs from the Gallican at several points.[15] Finally, the chant text includes added words: 'domine' in the first phrase of the antiphon and 'deus meus' at the end. Those ways in which a more generally used text has been moulded for this chant could have been important factors in the act of recalling its individual melody.

Set beside the Augsburg fragment, the Laon Gradual treats the words in a quite different way: while there are no abbreviations needing expansion,[16] there are many points where ends and beginnings of words are run together, while there are long intermediate spaces between syllables – all spacing having been determined by the need to write out musical signs separately above the text. Yet all of what has already been said about recall of melody through examination and recognition of the specific qualities of this text would apply here to the same extent as in reading the Augsburg fragment. That is, in the mind of a trained musician, the process of recall would already have been stimulated before any reading of the musical signs was undertaken. Such reading can then be understood as a simultaneous dual process: the tracing and linking of each moment through recall from memory and reading of visual information.

At the beginning of the chant the musical signs show that the word *Respice* is sung in a simple way, the first syllable to three separate notes (the second note at the same pitch as the first, and the third at a higher pitch) and the second and third syllables to single notes, probably set at the same pitch. Then 'in' is sung to two notes, the first again at the same pitch as what came before, the second higher, and 'me' is sung to three notes in the relation higher, lower, higher or equal. One further piece of information is provided by the 't' set at the very beginning, which indicates that the first note should be sung long or emphasized ('t' for 'tenere'). In this short passage the musical signs have indicated how many separate notes are

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[14] See Theresa Gross-Diaz, 'The Latin Psalter', in Richard Marsden and E. Ann Matter (eds.), *The New Cambridge History of the Bible from 600 to 1450* (Cambridge University Press, 2012), 427–45.

[15] For these passages the differences are (16) quia (quoniam); (18) meum (meam), uniuersa delicta (omnia peccata mea).

[16] Apart from 'dne' in the verse.

to be sung for each syllable, and, most of the time, whether those notes are lower, at the same pitch as, or higher than the note that precedes; and that, by and large, is how the musical signs can be read for the rest of the chant.

There are a few moments when the scribe has provided more information for the reader; for example, on the syllable 'ego' in the second line, there are two similar sets of signs. The first pair of vertically stacked 'ticks' is followed by a second pair, set slightly lower on the page and with an 'a' written in between (Example 1a). Apart from the implication that the second pair are not at the same pitches as the first, with the 'a' the reader is advised that this second pair of notes is to be sung more slowly than the first pair.[17]

What the reader could understand from the musical signs was in some ways extremely precise, and in other ways only suggestive. He/she could see how many notes were sung to each syllable, and also the movement of those notes, up and down in pitch. The intervallic relation of the notes was not specified at all, except sometimes where the next note was at the same pitch as the last. Knowledge about the exact intervallic steps taken as the chant moves on, syllable by syllable, would have to come from recall. Indeed, the significance of recall as the controlling element in the process of reading is well illustrated by those moments when a reading not influenced by recall could be quite wrong. For, although the vertical positioning of the signs was clearly based on the height metaphor – whereby higher on the page indicated higher in pitch and lower on the page indicated lower in pitch – the vertical space above the text was not measured out in a precise way. Signs set at the same vertical level could indicate different pitches, while signs set at different vertical levels could indicate the same pitch. For example, the two pairs of signs for 'ego' actually signified notes in the relation higher–lower–same pitch–lower, yet the third sign is set rather higher in the vertical space than the second (Example 1a).

Certainly the second pair of ticks could not be written lower without encroaching on the text, while the first pair could not be written higher without encroaching on the red capital R. Despite those particular circumstances, this seeming inaccuracy in handling the placement of graphic signs in relation to pitch levels is found throughout the notation of this chant, as in the signs above '*miserere*' and '*laborem*' (Example 1b, c). Such inexactitude sits in contrast to many moments of an accurate relation between placement of the graphic signs and pitch levels, as for example at '*uide humilitatem*' and '*meus*' (Example 1d, e).
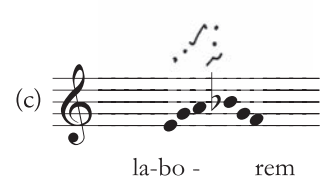
If the placing of the signs is sometimes highly indicative of intervallic distances and sometimes not, what was going on? To what extent did measured placing of the musical signs matter? Was the scribe attempting but not entirely achieving measured placing, or was measured placing an unintended consequence of the way in which the signs followed each other, moving up and down the page? Some answers to these questions are absolutely clear; above all, there are many points in this notation of *Respice in me* where the scribe could have used the space available to set signs at different heights, but did not. Examples include the four signs over '*miserere*' (Example 1b) and the '*uidehumilitatem*' passage

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[17] On 'a' as an indication of augmentation ('augete') in Laon 239, see *PM* 10, 181.
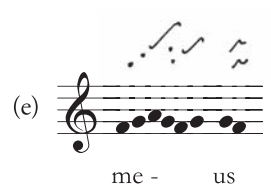
Example 1a–e Passages from the Introit *Respice in me* (Laon 239, fol. 75v, GT 284).

(a)

e - go

(b)

mise- re- re

(c)

la-bo - rem

(d)

ui-de hu-mi - li- ta - tem

(e)

me - us

(Example 1d). Had the scribe set the first sign, over '*uide*' higher, then it would have been possible to set the sign over '*humilitatem*' lower, representing a pitch a tone below that sung for '*uide*'; but he did not, even though there was plenty of space. Evidently, the relation between a specific vertical level and the pitch represented by a graphic sign was only momentary and not lasting. This way of treating the placement of signs suggests that 'inexactitude' can be a description of the treatment of pitch, but not a historical judgement; this kind of notation is not striving to be something which it is not. It also suggests that recall remained in control of the process of reconstructing a melody in the process of reading: it was recall that would determine the correct intervallic relations between successive notes in the melody, while the visual signs guided the reader's attention and helped to support his/her movement through the chant. Most significantly, it is the constant interaction necessitated by this combination of visual stimuli and recall that

most clearly justifies the way in which the notation can only be read moment to moment, rather than in one sweep through one or more written lines.

3.3 A PARADIGM SHIFT?

This consideration of how a chant written out as a text and written out as a text with musical signs could be read has sought to expose the extent to which both types of document depended on and were designed to draw in the memory of the reader. In both forms of record, a variety of layers of visual signs was intended to stimulate recall in a series of steps: ultimately the reading of and musical delivery from each document depended on the interaction of signs recorded in writing and the memory of the reader. In a fundamental sense, the move from one kind of inscription, without musical signs, to another, with musical signs, did not change the way in which the written record was read. That discovery of closeness rather than distance between these forms of record may surprise, yet it lays bare the extent to which conceptualization of this changeover in terms of the binary 'oral to written' is simplistic and unhelpful. Even if the relation between these two cognitive inputs was altered by the presence of musical signs, this was no paradigm shift, at least not in relation to the Gregorian repertory collected in a gradual. In both cases the reader wishing to sing required prior knowledge of the melody – or, perhaps more abstractly, the melodic pattern represented by the musical signs. What the musical signs achieved was control of the reader's singing in very precise ways: which notes were linked with individual syllables, exactly how many notes fitted with each syllable and where the melody should move more or less emphatically.

For the melodies of the ecclesiastical chant such graphic signs could act as stimuli in the process of reading, but they did not replace recall of an already known melody. This was not the only way in which music notations written in the ninth century could be read, however: that a music notation could offer to a reader a newly created piece is demonstrated by the earliest extant example, written between 820 and 840 by a scribe who formed part of a group active in Regensburg in that period. The prosula *Psalle modulamina* was written out at the end of a book made by the scribe Engyldeo,[18] and is securely dated through the clear relation of Engyldeo's work to that of other named scribes and the books they made.[19] The page is shown as Figure 4, with a transcription in Example 2a. Even if written out as text with musical signs above, the process whereby the musical signs can be understood is rather different from the process of reading the Laon Gradual: although *Psalle modulamina* also demands a process of recall – the written signs leading the reader to something already laid down in his/her mind – the path from eye to stored memory is followed in a different way.

The prosula was made by someone educated in the art of exegesis. This new creation is of a kind that is often found in liturgical books produced in the ninth and tenth centuries: the

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[18] Munich BSB clm 9543, fol. 199v; on this manuscript see Bischoff, *Schreibschulen*, I, 203–4.
[19] Bischoff, *Schreibschulen*, I, 177–9. See also Möller, 'Die Prosula "Psalle modulamina"'.

Figure 4 Munich, Bayerische Staatsbibliothek clm 9543, fol. 199v.

Example 2a The prosula *Psalle modulamina*.

Psal- le mo-du-la-mi-na lau-dis ca-no-ra dul-ci-ter hæc do-mi-no coe-tus fi-de-lis

qui re-ple-tur sem-per sa-cris da-pi-bus est glo-ri- a et al-ti-to-nan-tis

uo-ce cor-da iu-bi-la cum chris-to sem-per.

Chris-tus e-ri-pu-it nos in-fer-ni claus-tris re-sur-gens au-rea-m co-ro-nam su-is tri- bu-it

ex mor-tu- is mor-tem abs-tu-lit con-te-rens an-ti-qui ca-put ser-pen-tis.

Iam si-ne fi-ne reg-na-bit non iam in ae-ter-num mo-ri- tur

mors et se-cu-la sem-per in ma-nu e- ius sunt om-ni- a

ui-ta gau-di-um lux pax po-tes-tas glo-ri-a laus ho-nor

composition of tropes, sequences, prosulae and other kinds of new liturgical poetry, enhancing the inherited Roman repertory of ecclesiastical chant, would become exceedingly popular in this and the following centuries. At this relatively early date, *Psalle modulamina* is unlikely to have been the first of its kind, yet such poetico-musical compositions as this were not at this time organized into collections, and many may not have been recorded in writing. *Psalle modulamina* is made on the basis of both the text and the melody of a liturgical chant, *Alleluia V. Christus resurgens*. This Alleluia was sung during the Easter season and uses a biblical text from Romans 6.9:

Example 2a (cont.)

A-diu-uet pro-te-gat li-be-ret nos mors il- li- us ul-tra et in ae-uum.

non no-ce-pit ma-lig-nus et non do-mi-na- bi- tur no-bis a- diu-tis e-ius mi-se- ri- cor-di- a

gra-ti- a lar-ga qui da-bit re-demp-tor cun-ctis pal-me uic-to- ri- am

et re-qui-em sem-pi-ter-nam.

Alleluia
V. Christus resurgens ex mortuis iam non moritur:
mors illi ultra non dominabitur.[20]

The jubilant text composed from these words uses its biblical model as a direct starting point: in the transcription below, the words of the Alleluia are underlined.[21]

Psalle modulamina laudis canora
dulciter haec domino coetus fidelis
qui repletur semper sacris dapibus
est gloria et altitonantis
uoce corda iubila cum Christo semper [alleluia]

Christus eripuit nos inferni claustris
resurgens auream coronam suis tribuit
ex mortuis mortem abstulit
conterens antiqui caput serpentis.
Iam sine fine regnabit
non iam in aeternam moritur

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[20] Alleluia V. Christ rising from the dead dieth now no more: death shall have no more dominion over him.

[21] The text is transcribed here as recorded in Munich 9543: it also survives in an eleventh-century manuscript (Oxford, Bodleian Library Selden supra 27, fol. 81) and is edited on the basis of both manuscripts by Olof Marcusson, *Corpus Troporum II. Prosules de la messe 1 Tropes de l'alleluia*, Acta Universitatis Stockholmiensis. Studia Latina Stockholmiensia 22 (Stockholm: Almqvist & Wiksell International, 1976), 28–9.

mors et secula semper in manu eius sunt omnia
uita gaudium lux pax potestas gloria laus honor.

Adiuvet protegat liberet nos <u>mors illius</u>
<u>ultra</u> et in aeuum
non nocebit malignus et <u>non dominabitur</u> nobis
adiutis eius misericordia gratia larga
qui dabit redemptor cunctis palmae uictoriam
et requiem sempiternam.

The new text exhorts those who listen to sing praise to Christ, who has conquered death by 'trampling the head of the old serpent' (*conterens antiqui caput serpentis*), so that 'the evil one will not harm and will not rule us' (*non nocebit malignus et non dominabitur nobis*). In terms of textual meaning, this new poetry represents a composing out of meaning understood to be inherent in the biblical verse: the new text provides a more rounded story about what actually happened, explains the significance of the event for Christians and presents all of this with rhetorical force in a poetic shape. Yet it is not only at the level of the word text that *Psalle modulamina* represents an exegesis: for it is also an elaboration of the Alleluia (and before that the biblical text) in sound. All the words of the Alleluia are also present in the new composition (including '*Alle*' transformed to '*Psalle*'), and the music of the Alleluia chant is also present: as a series of separate notes, the melody of the Alleluia provides the melody of the prosula. The first part of the prosula text, up to '*cum Christo semper*', is set to the melody of the Alleluia and *iubilus*, and the second part of the prosula text, starting with *Christus*, follows the verse melody. Moreover, the Alleluia melody has been broken up in such a way as to retain the melodic structure of the chant in the prosula: this was achieved by retaining the link between the beginnings of individual words drawn from the Alleluia verse and notes in the melody, and then setting one new syllable to each single note (see Example 2a).[22] While the creative basis of the new composition was biblical exegesis, the formal principle was to use each separate note of the Alleluia melody as a basis for a text syllable. In other words, it is onto the *sound* of the chant, as expressed in phonetic and melodic tones, and in the way they are modulated in time, that the new composition was built.

That the nature and detail of this new piece should have been primarily determined by sound, available only in its own terms – unfolding in time or in recall – must be salutary to anyone considering the history of writing. In the context of investigation of an early use of music notation, it demonstrates how recall could be the foundation for reading a new

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[22] Here the neumes from Munich 9543 are written over a pitched version derived from the Alleluia notated in Munich BSB clm 9921, fol. 40r (s.xii, Ottobeuren). For a full transcription see Bruno Stäblein, 'Zwei Textierungen des Alleluia Christus resurgens in St. Emmeram – Regensburg', in *Organicae voces. Festschrift Joseph Smits van Waesberghe* (Amsterdam: Instituut voor Middeleeuwse Musiekwetenschap, 1963), 157–67; rep. in *Bruno Stäblein. Musik und Geschichte im Mittelalter. Gesammelte Aufsätze*, ed. Horst Brunner and Karlheinz Schlager, Göppinger Arbeiten zur Germanistik 344 (Göppingen: Kümmerle, 1984), 167–77.

Example 2b Passages from *Alleluia V. Christus resurgens* and the prosula *Psalle modulamina*.

Psal- le mo-du- la-mi-na lau-dis ca-no-ra dul-ci-ter hæc do-mi-no coe-tus fi-de-lis ...

Al- le- lu- ia ...

Chris- tus e- ri-pu-it nos in-fer- ni claus-tris re-sur-gens au- re- am co-ro-nam su-is tri- bu-it

V. Chris-tus re- sur- gens ...

composition. A reader of this passage of notation would not need to have previous knowledge of what he/she read in quite the same sense as for the melodies notated in the Laon Gradual: the memory path Engyldeo invited the reader to follow involved recognizing the relation between these newly composed words and a specific, known Alleluia chant (Example 2b). Once having made this connection – heavily signalled through the opening word '*Psalle*', which should then lead the reader to find the word that marked the beginning of the verse, here '*Christus*' – this reader could construe the individual neumes as the single notes of the named Alleluia melody, now separately articulated. This is a kind of composition that could only be made in a world that had begun to rationalize melody as a series of separate, identifiable notes;[23] and, of course, the prosula is a kind of composition that capitalizes upon that conceptualization of musical sound. As a way of using musical signs, Engyldeo's inscription in clm 9543 depends on a reader's recall of an already known melody – from a chant that is differently formulated – and then to the reader's perception of how that knowledge should guide the reading and singing of a new composition.

Thus, even if after the invention of musical signs recall remained a primary element in the reading of a written record of music, it was possible to use recall in more creative ways than straightforward repetition. Once having taken such a step, a writer of musical signs could begin to play with more possibilities. In this sense the recording of *Psalle modulamina* in the period 820–40 shows a scribe already embarked on exploration of the different ways in which musical signs could be exploited. Yet, through one specific element in the music notation, it

[23] This way of conceptualizing music can be traced in the new modal theory made circa 800, in the reception of Boethius's *De institutione musica* in Carolingian circles (the earliest extant copy is dated by Bischoff in the first quarter of the ninth century), and finally in the theory proposed in the late ninth-century *Musica enchiriadis*: see further below, pp. 319–25.

also exposes the absence of a clear division between the registers of text written out in letters and music written out in signs placed above the text. That element, appearing extensively in these few lines, is liquescence. 'Liquescence' is the name given to 'a deformation of the [neumatic] sign, [made] in relation to a quality of language … [such as] a diphthong or combination of two consonants … [or musical] articulation on a consonant demanding care'.[24] In the notation for *Psalle modulamina* in clm 9543, neumes adapted in form to signify liquescence are written over the syllables ending with the first of the two letters underlined below: underlining highlights the letter combinations that have attracted liquescent treatment.

> Psa<u>ll</u>e / altitona<u>nt</u>i / co<u>rd</u>a / eripui<u>t n</u>os / infe<u>rn</u>i / clau<u>str</u>is / resu<u>rg</u>ens /
> morte<u>m a</u>bstulit / re<u>gn</u>abit / aete<u>rn</u>um / Adi<u>uv</u>et / i<u>ll</u>ius / u<u>lt</u>ra / no<u>n</u>
> <u>n</u>ocebit / mali<u>gn</u>us / no<u>n</u> dominabitur / ei<u>us</u> / la<u>rg</u>a

Many of the points in *Psalle modulamina* where the scribe has written liquescent signs fall into a clear category, as explained by late antique grammarians: that of the *semivocales* letters, which differ from the *vocales* on the one hand and the *mutae* on the other, behaving sometimes as voiced vowels, sometimes as unvoiced consonants.[25] The differentiation between these categories of letter is all about the way in which they are voiced, those ways in which the mouth can make the sounds for which the individual written letters stand.

These signs indicating liquescence underline an important correction to the way in which such written inscriptions are often described: we see two layers of writing, one above, one below, and this leads to the abstraction of two registers of expression in sound, 'text' and 'music'. Yet the liquescent signs are indicative of a quite different division: if we see the letters of the words that make up grammatically articulated phrases as a concrete example of writing – as, in a Christian world, scripture was the essential model of the written – we might now describe the graphic marks over the words of *Psalle modulamina* as indications of how those words sound, within which category changes of pitch, speed and voice production can be included. Read in this way, the graphic marks above the text represent a prescriptive reflection *back* from writing *into* the medium of sound from which these sounds had first been captured. Thus, the transformation of records for singing from those preserving words only to those preserving words with musical signs cannot in itself be judged to have been a paradigm shift: similarity and continuity between the two forms of transmission are much too marked. Nevertheless, it was a transformation that would in time allow, indeed

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[24] 'une déformation du signe [neumatique], en rapport avec une particularité du langage' such as a 'diphtongue, rencontre de deux consonnes' or 'articulation sur une consonne demandant une certaine attention': Colette, 'Élaboration', 43.

[25] On the phenomenon of liquescence and its relation to the *semivocales* letters, see especially Haug, 'Zur Interpretation der Liqueszenzneumen', with further bibliography: he provides the useful definition (from Alcuin) that syllables with *semivocales* letters begin on a vowel and end with the semivocal (in contrast to *mutae*, which begin with a consonant and end with a vowel). Standard examples of semivocal letters in Latin include the 'liquids' l, m, n, r.

encourage, a paradigm shift, and the way in which *Psalle modulamina* was written out shows one of the steps taken in that direction.

3.4 EVIDENCE OF MUSIC NOTATIONS WRITTEN IN THE NINTH CENTURY: METHODOLOGY

The sheer diversity of examples of music notation written in the ninth century indicates how far this new writing technique had penetrated European culture by 900. By this time we can find music notation prepared for and written into books made for cantors, added to books for priests, written into margins and empty spaces in books as pen trials, used for the inscription of specific chants, old and new, used extensively with songs, old and new, and as the determining feature of an entirely new kind of page layout for the new genre of sequences. Above all there are enough examples of music notation integrated into books to establish beyond doubt that by 900, in a good number of writing centres, preparation for and inclusion of this register of writing had become standard. It is not only the variety of uses to which music notation was being put by 900 that makes manifest the wide familiarity of the technique but also the variety of forms musical writing takes: to the extent that the sharing of a number of signs and ways of deploying them in the space above the text are shared by groups of examples, the number of different kinds of music notation available by 900 includes at least six different types of script – 'Palaeofrankish', 'Frankish' (written in Western Frankish and Eastern Frankish fashions), 'Breton', 'Lotharingian', 'Aquitanian', 'Old Hispanic' and 'Nonantolan'.

Among the numerous questions that this material raises, many are simply unanswerable: foremost among these is why, when singing was an oral/aural activity carried out with the support of literate instruments, there was a change of practice at a particular moment. With a written notation of music, it would be possible for communication to reach beyond the immediate physical space and time of individual singers, but why should visual artefacts that offered such a degree of autonomy first become interesting in the early Carolingian period? With foreknowledge of the unattainability of answers, such questions may nevertheless be kept in mind as important directives in the exploration of an abundant and fascinating material. In this chapter the first step in that exploration will be the presentation and brief description of that material.

Previous attempts to list extant ninth-century notations date from the late nineteenth century right through the twentieth century:[26] the most recently published list was made by David Hiley for the *New Grove Dictionary*,[27] and (in the second edition) enumerates thirty-seven '9th-century examples of neumes'. In his remark that 'a few' of the manuscripts he

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[26] See above, pp. 37, 49–50.
[27] 'Notation', *NG* 2, with entries for thirty-eight manuscripts; this was updated from the list in the 1980 edition) with entries for twenty-one manuscripts.

named were 'no doubt dated optimistically early', Hiley pointed directly to the significant difficulties that face anyone trying to identify these earliest examples of medieval music notation. A scholar engaged in this exercise encounters two sets of problems: first, the dating of the basic object – a book, a passage of text, or a short line of text; and second, the dating of any musical signs associated with that object. It is not always the case – indeed, it is very frequently not the case – that the two were written at the same time. A famous example of such disjunction is the notation added to the Codex Amiatinus, a large pandect bible copied before 716 in Wearmouth-Jarrow.[28] Neumes were written into this enormous book over the lamentations of Jeremiah and the *Canticum trium puerorum*, but these neumes are in a central Italian script, and cannot therefore have been written before the manuscript left England in the early eighth century.[29] Confusion of the date of writing text and writing neumes remains embedded in the literature,[30] and is sometimes difficult to avoid since a neume on its own is more or less undatable, and it is only contextual elements that can help to determine the situation in which music notation has been written.

The main contextual guide is, of course, text hands. In this respect the advances of textual palaeography between the late nineteenth and the late twentieth centuries have helped to correct many errors, small or considerable, made by musical scholars: such a claim as that made in 1847 by Danjou that the manuscript now Montpellier H.159 was 'the oldest and most precious version of early chant known' did not stand scrutiny for long, once textual palaeographers could be consulted.[31] A more recent and important clarification is the dating of the Gradual Laon 239, an example that illustrates the ways in which disagreements can arise. In the literature on this manuscript there has been confusion – relatively unremarked.[32] A catalogue published in 1863 provided the date 'second half of the ninth century', mainly because of the large capital A on fol. 3r in a Franco-Saxon style; in the *Paléographie musicale* facsimile of 1909, and now on the basis of the liturgical contents, Beyssac remained committed to this dating, only narrowing it more towards the end of the century,[33] and that date was maintained by Jammers in 1965.[34] But a whole other direction, using the description 'after 930', has been repeated in another series of publications, from *Les Sources*

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[28] Florence, Biblioteca Medicea-Laurenziana, Amiatino 1.

[29] Wagner dated these neumatic entries in the eleventh century: see his *Neumenkunde* (1912), 102–3, n. 1.

[30] As, for example, in the table in *NG* 2 that includes BNF lat. 11958, a gospel book made in eastern France in the first half of the ninth century (*BK* III no. 4716); this has notation on fol. 14r–v over the genealogy of Matthew, read on Christmas Day. In fact that notation can be dated on the basis of a later entry added in the margin above the beginning of the reading ('Dominus uobiscum. Initium sancti euangelii secundum Mattheum'); this has the same neume forms as the added introduction and is in the same ink colour, but with text written by a hand that can be dated in the eleventh century.

[31] See above, pp. 16–17.

[32] Except briefly by Peter Jeffery, 'An Early Cantatorium Fragment related to Ms. Laon 239', *Scriptorium* 36 (1982), 245–52 and Pls. 29–30, at 248.

[33] *PM* 10, 17, 35–40; see also Édouard Fleury, *Les Manuscrits à miniatures en écriture latine de la Bibliothèque de Laon* 1 (Laon: Impr. de E. Fleury, 1863), 52 and Plate 6.

[34] Jammers, *Tafeln*, Plate 37.

(1957) to the *Graduale novum* of 2011.[35] Beyond musicology, the ninth-century date was retained in a monograph on Laon manuscripts published in 1978 by John Contreni,[36] and palaeographical confirmation of this came in the second volume of Bischoff's catalogue of ninth-century manuscripts published in 2004, where the gradual is described as 'IX Jh., wohl 4. Viertel' (ninth century, probably fourth quarter), substantially earlier than the second quarter of the tenth century.[37] To be able to place this fully notated gradual in the ninth century – at the very least, before 900, and possibly two decades earlier – rather than after 930 represents a significant finding since, without having to rely on the guesswork invited by fragments, this would confirm the hypothesis that scribes were already making such books as this gradual well within the late Carolingian period.

Of course it is helpful when assessments made on the basis of other kinds of argument concur with palaeographical appraisals. Palaeographical examination of Milan Ambrosiana D 84 inf. – a fully notated missal made at Bobbio – has recently dated this to the last third of the ninth century.[38] It is a book with many elaborate initials, allowing art-historical assessment also: the style of the initials, executed by two scribes, can be compared with several other surviving manuscripts, creating useful juxtapositions. In a first analysis of these Bobbio books, Fabrizio Crivello set the missal into the period 896–929,[39] and then, as a result of closer consideration of the relation of the initials in a group of four books, set the missal as the first in the group and thus at the beginning of this period: 'tra la fine del IX e l'inizio del X secolo'.[40] Such an agreement about a date at the end of the ninth/beginning of the tenth century coming from two different methodologies is all the more important since it recovers for this early period a large and well-notated book previously considered in musicological literature to date from the 'tenth/eleventh century'.[41]

Then there are cases where uncertainty remains: sometimes there is not enough comparative material available (or recognized); and sometimes the depth of palaeographical examination necessary to clarify a hypothesis has not yet been carried out. An important (and perhaps surprising) case is the second of the two notated graduals copied in the *Graduale Triplex* and *Graduale Novum*, the famous cantatorium of Sankt Gallen. Long thought to be a

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[35] *Le Graduel Romain*, 57; *CLLA* no. 1350; Fischer, 'Laon, Bibl. de la ville, 239', *BG* 21 (1996), 75–91, at 75 (referring to *PM* 10); *GN*, x (also referring to *PM* 10). It is unclear from where or on what basis the dating to 930 emerged.

[36] Contreni, *The Cathedral School of Laon*, 161, where Contreni's use of Jammers' *Tafeln* is evident.

[37] *BK* II, no. 2094. Bischoff saw Laon 239 in November 1962 (his notes are dated 29.xi.62), and already then described the manuscript as written by several hands of 'ca IX 4/4'; that opinion will certainly have been available to Contreni, and then later to Peter Jeffery, with whom Bischoff was in correspondence in 1981.

[38] *BK* II, no. 2616. The missal has full, original notation for the *temporale* as far as the first Sunday after Pentecost (fols. 29–198), but the *sanctorale* (fols. 253–362) only received notation on its first page.

[39] Fabrizio Crivello, *La miniatura a Bobbio tra IX e X secolo e i suoi modelli carolingi* (Turin: U. Allemandi, 2001), 24ff, 91–2, 100–1.

[40] Crivello, *La miniatura*, 100.

[41] See, for example, *Le Graduel Romain*, 71; *CLA* 3, no. 332 (where the missal is not the main material under discussion) also suggests a later date.

ninth-century manuscript – as indicated in the title of the facsimile published by Solesmes in 1924,[42] this date was rejected by the Sankt Gallen Stiftsbibliothekar in 1984, following a dendrochronological analysis of the wood used to support two fifth-century ivory plaques in the binding. Johannes Duft argued that the codex must have been made in the period when Hartmut was Abbot, between 922 and 925.[43] Meanwhile, palaeographical assessments by Bischoff and Bruckner had agreed with the Solesmes dating in the ninth century (albeit clarified by Bruckner as 'end of the ninth century').[44] In the published note by Bischoff it is not clear whether he had, at the point of publication in 1934, examined the manuscript in person, but a more detailed picture of his views emerges from the notes in his Nachlass in the Bayersiche Staatsbibliothek.[45] There is evidence that he was observing and trying to sort out several layers of additions made at the beginning and end of the codex: he notes, for example, the presence on pp. 3–4 of several tenth-century hands (among others). Among the hands making additions is one that added the *Hymnum trium puerorum* on pp. 5–6; for this he notes the date 'IX/X', indicating beyond doubt that he considered the main part of the codex to have been made before this. It might be thought that the very high number of books made at Sankt Gallen in the last decades of the ninth and the early decades of the tenth centuries that still survive – and are mostly still in the Stiftsbibliothek at Sankt Gallen – would have ensured the production of a detailed palaeographical study. Yet such a study has not yet been made: even Bischoff's work in that direction seems to have been cut short at the time of his death.[46] The most recent publication dealing with this manuscript, a magisterial study by Anton von Euw of *Buchkunst* at the abbey between the end of the eighth and the eleventh centuries, seems to have prolonged the confusion.[47] Von Euw uses artwork in initials as his main tool for studying individual books, and in this respect he connects the cantatorium directly with other named manuscripts made 'under Notker Balbulus' who died in 912, but von Euw did not challenge the dating of 922–5 based on dendrochronology and a link with comments in Ekkehart IV's continuation of the *Casus sancti Galli*. Quite apart from the need to re-visit the dendrochronological assessment, however, the assumption that the codex was made at the same time as the binding surely deserves to be challenged. It is

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[42] *PM* 2e série 2.

[43] Johannes Duft and Rudolf Schnyder, *Die Elfenbein-Einbände der Stiftsbibliothek St. Gallen* (Beuron: Beuroner Kunstverlag, 1984), 95–128, at 118.

[44] Bernhard Bischoff, 'Die alten Namen der lateinischen Schriftarten', *Philologus* 89 (1934), 461–5; reprinted in his *MAS* I (Stuttgart: Anton Hiersemann, 1966), 1–5, at 3. Albert Bruckner (ed.), *Schreibschulen der Diözese Konstanz: St. Gallen II*, Scriptoria medii aevi helvetica: Denkmäler Schweizerischer Schreibkunst des Mittelalters 3 (Geneva: Roto-Sadag, 1938), 98–9.

[45] Munich BSB Ana 553. I record my thanks to Florentine Mütherich and to Bernhard Bischoff's daughter, Charlotte Bruhn, for helping me to gain access to this material.

[46] See Hoffmann, 'Bernhard Bischoffs Katalog', 8 and 17ff.

[47] Anton von Euw, *Die St. Galler Buchkunst vom 8. bis zum Ende des 11. Jahrhunderts*, Monasterium Sancti Galli 3, 2 vols. (Sankt Gallen: Verlag am Klosterhof, 2008), no. 131.

entirely possible that the current binding was made well after the manuscript had been in use for a substantial period, especially in view of the fact that at least one gathering was added at the front already in the early tenth century (potentially circa 900).[48]

Such examples as the Laon Gradual, the missal made in Bobbio and the Sankt Gallen cantatorium provide a lesson on the road from innocence to experience: they reveal at one and the same time the degree to which study using techniques and results from other disciplines can be useful in musicological work – as well as the need for care in the way in which such information is understood and handled, always remaining aware of a hermeneutic process of reasoning. Beyond this there remains the real possibility that palaeographical dating may not be able to establish dates more closely defined than within a range of 25–50 years: a trained scribe might continue writing in the same way learnt in his/her childhood over a period of thirty years (or, exceptionally, more). For these reasons the cut-off date of 900 chosen in this study has to be understood as representative of a period that could, in the case of a number of manuscripts and fragments, stretch as far as 925.

The palaeographical advance most critical to my own new work on ninth-century music scripts and notations is the publication between 1998 and 2014 of a three-volume catalogue of manuscripts made in the ninth century in continental Europe, excluding Visigothic manuscripts.[49] The substantial palaeographical work of Bernhard Bischoff (who died in 1991 before the publication of even the first volume of his catalogue) has entirely altered our knowledge and understanding of writing practices in the ninth century, let alone book production, intellectual thought and more general aspects of culture. For the current purposes, this catalogue is now 'the securest starting point for anyone who wants to find Latin manuscripts copied in the ninth century, many of which are mis-dated in all other published accounts'.[50] Much of Bischoff's authority rests on his unparalleled breadth of knowledge and precise visual memory: it was by seeing thousands of manuscripts, often revisiting the same material many times during his lifetime, and being able to remember (and to consult his large photographic archive), that he was able to perceive the work of individual scribes within a more general framework. Bischoff's approach was based on mapping the scripts of a region ('Schriftprovinz', writing province) as well as in individual scriptoria (which did not always have a specific distinguishable script),[51] and this allowed him to follow

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[48] The current first gathering (pp. 1–8).

[49] *BK.*

[50] David Ganz, review of *BK* I, *Francia* 27 (2000), 273–78. See also the (unfinished) review article by Donald Bullough, 'A Scholar's Work is Never Done', where he points out the extent to which earlier attempts at dating pre-1100 manuscripts could often seem quite arbitrary: 'even Wilhelm Levison and André Wilmart, who had probably looked at more manuscripts than any other scholars of their generation and shared an unparalleled knowledge of Latin and patristic texts . . . could go badly wrong' (400). For a detailed assessment of problems specific to the third and last volume of Bischoff's catalogue, published twenty-three years after his death, see Hoffmann, 'Bernhard Bischoffs Katalog'.

[51] This was first demonstrated in his *Schreibschulen* I, published in 1940.

the evolution of script types over wider areas. In no way did his palaeographical method deal in generalities, however: it was based on the 'precise observation of concrete details, in the first instance the ligatures and abbreviations, thereafter above all the forms of letters, ductus and the proportions of script and so on',[52] as well as 'external indications' such as 'the history of the volume' and 'the nature of the texts which were copied in it'.[53] His carefulness about dating is revealed in modifications he made to his own judgements throughout his career: this becomes clear in his notes in which he came back to ideas about dating as many as four times, while his natural caution is revealed in the many qualificatory words used in the *Katalog* (vielleicht, kaum, wahrscheinlich, möglicherweise, etwa, wohl, wohl etwa).[54] Finally, when he was quite sure in his own mind that a manuscript that had previously been incorrectly dated in the ninth century was written later, an entry to that effect was included in the catalogue.

Bischoff was himself intrigued by both the content and the writing techniques of all kinds of entries in manuscripts, from Tironian notes and secret writing to neumes: in his notes he assiduously noted the presence of neumes in a manuscript, often providing dates – often excluding them from the ninth century. Most significantly, since no one else has said this in print (to my knowledge), he was conscious of a serious problem in the reading and thus dating of passages of text script linked with melismatic chant. The following paragraph appears in his notes about Laon 266:[55]

> In those passages in which the scribe – because of an elaborate melody –
> has to spread out the script to correspond to the neumes, he cannot
> display the full quality which requires uniform appearance of the script.
> He can only set groups of letters hesitatingly instead of writing fluently.
> In Laon 266 the simple melody of *Omnipotentem* gives him the free-
> dom to do this, and he creates an excellent late Carolingian script
> design, that permits a dating on the basis of normal palaeographical
> experience.[56]

[52] Hartmut Hoffmann, 'Bernhard Bischoff und die Paläographie des 9. Jahrhunderts', *Deutsches Archiv* 55 (1999), 549–90, at 588: 'der genauen Beobachtung konkreter Details, zunächst der Ligaturen und Kürzungen, sodann vor allem der Buchstabenformen, des Duktus und der Proportionen der Schrift usw'.

[53] Jean Vezin, review of *BK* I, *Scriptorium* 56 (2002), 357–61, at 359.

[54] Vezin, review of *BK* I, 360.

[55] These notes appear to have been made in 1981 prior to answering an enquiry from Peter Jeffery about the relation between Laon 239 and Laon 266 in 1981: Peter Jeffery's study of Laon 266 is published as 'An Early Cantatorium Fragment'.

[56] 'In den Partien in denen der Schreiber wegen reicher Melodie die Schrift den Neumen entsprechend verteilen muß, kann er nicht seine volle Qualität entfalten, zu der das geschlossene Schriftbild gehört. Er kann nur zögernd Buchstabengruppen setzen statt zügig zu schreiben. In Laon 266 gibt ihm die einfache Melodie des "Omnipotentem" dazu die Freiheit und er bringt ein vortreffliches spätkarolingisches Schriftbild zustande, das eine Datierung auf Grund normaler paläographischer Erfahrung erlaubt.' Bischoff, *Nachlass*, Ana 553: A, 1, Laon.

Examination of the hymn *Omnipotentem semper adorent* as it is written out in Laon BM 266 (front endleaf, fol. Av, see Figure 5) immediately exposes what concerned Bischoff: in the hymn well-shaped letters, as well as a constancy of rhythm and module size, stand in stark contrast to the lesser control exercised by what is manifestly the same scribe when he is writing out the text for more elaborate chants of the mass. The scribe's usual fluency of rhythm was thwarted when writing out the text for these elaborate chants, an impediment caused by a need to leave unaccustomed spaces within and between words. As experience of palaeographical investigation often makes one aware, the less well formed the script, the less easy it is to tie down in respect of date and location.

Even if largely published posthumously and therefore not thoroughly overseen and corrected by the author, Bischoff's *Katalog* is an extraordinary reference work, listing over seven and a half thousand manuscripts made in the ninth century. For a student of ninth-century music notations, this work has not only unearthed new sources,[57] but also suggested a chronology of manuscripts that differs in important particulars from that used by musicologists up to now. Some of his judgements, such as the dating of the purple and gold cantatorium of Monza to the middle of the ninth century (as opposed to before 800, as proposed by Hesbert in 1935),[58] have been available since the publication of the second edition of Gamber's *CLLA* in 1968. Other assessments, such as the re-dating of a missal made in Bobbio, have emerged through the posthumous publication of the *Katalog*.[59] Besides significantly different datings, there are examples of more subtle but significant shifts: the moving of an antiphoner fragment notated in Breton neumes from the relatively unqualified description 'X^e s' provided by Madeleine Bernard to 'IX. Jh., ca. 3. Viertel' has considerable significance in the context of a study concerned with techniques of writing developed in the ninth century,[60] while the combined mass and office antiphoner now Albi Bibliothèque municipale Rochegude 44, and variously dated by

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[57] Much of what is now embedded in musicology was actually first noticed by Bischoff, long before this publication: the most famous example is, of course, *Psalle modulamina*, noted in his *Schreibschulen* I, first published in 1940. His main interlocutor about early musical notations seems to have been Ewald Jammers: see above, p. 36.

[58] Monza 88; Dom René-Jean Hesbert, *Antiphonale missarum sextuplex* (Rome: Herder, 1935), xi: 'un témoin du VIIIe siècle, caractérisé par un certain nombre d'archaïsmes que l'on ne trouve déjà plus dans les rares témoins qui nous restent de la fin du siècle'; the contrast here is between a dating based on content and a dating based on a palaeographical assessment. A note of disappointment on the side of Solesmes when the purple Cantatorium was not included in Lowe's *CLA* is evident in Michel Huglo's review of volumes 1–4. The manuscript has no notation, but its importance as an example of the transmission of chant in the period after Roman practice was formally adopted north of the Alps is considerable.

[59] *BK* II, no. 2616.

[60] Paris, Bibliothèque Sainte-Geneviève 223, endleaves I, II, 99, 100; see Bernard, *Répertoire* I: *Bibliothèque Sainte-Geneviève*, 33; *BK* III, no. 5166.
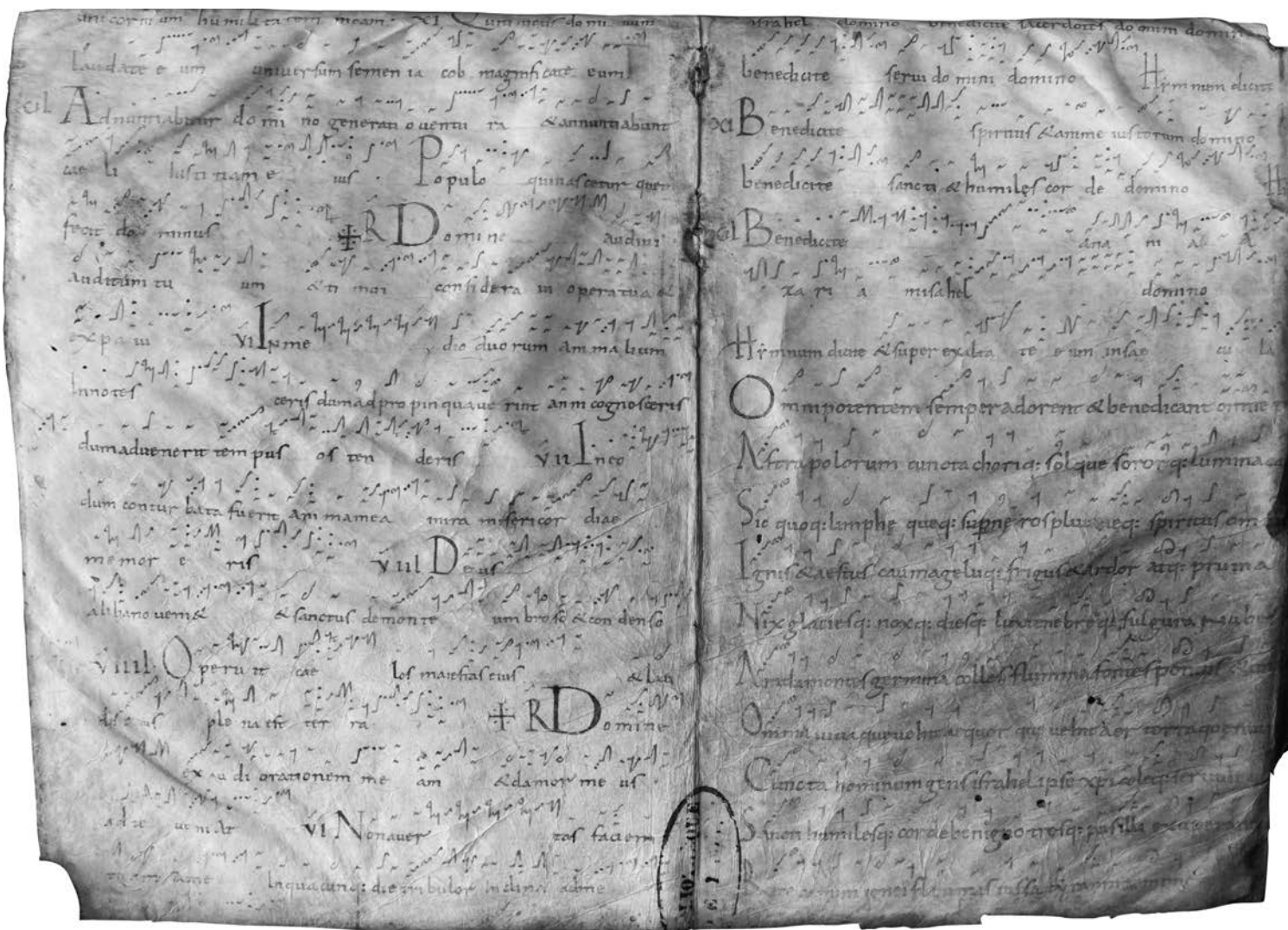
Figure 5 Ville de Laon, Bibliothèque municipale ms 266, front endleaf, fol. Av.

others as 'ninth century' and circa 890,[61] is expressly excluded as a tenth-century manuscript.[62]

3.5 EVIDENCE OF MUSIC NOTATIONS WRITTEN IN THE NINTH CENTURY: SCRIPTS

Most notations datable to the ninth century have enough distinct graphic features to allow clear categorization by type of script: a first way of looking at such extant material is therefore to consider those individual types. One of the classical definitions of 'script' is to write 'using a particular alphabet'.[63] It is in this sense that, for example, Bischoff uses the term '*lateinische Schrift*',[64] explaining that 'the Latin alphabet is a descendant of a western Greek script which was taken over by the Romans', comprising 'up to the first century BCE twenty-one letters', and eventually 'written from left to right'.[65] In music notation there can be no equivalent term applicable to ways of writing found in early medieval manuscripts: there is no fundamental shared alphabet of signs. Indeed, the assumption that musical sounds are captured by all neumatic scripts in the same way – reflecting groups of individual notes, dividing up melodic movement into equivalent units, and therefore identifiable with the same descriptive words for different graphic signs – has provoked serious problems in the history of study of neumatic notations.[66] The appropriate parallel between text and music scripts is at another level, between the various ways of rendering the Latin alphabet (such as Uncial and Caroline minuscule scripts) and the various types of music scripts.

Besides differences of fundamental principle between the various early music scripts about the way in which sound is captured, there are two main aspects of variation between scripts: one is the most evident, the shape and ductus of individual graphic signs. The other concerns the way in which graphic signs are placed in the space above the words: for this

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[61] Guillaume Libri and Félix Ravaisson, *Catalogue générale des manuscrits des bibliothèques publiques des départements* 4° I (Paris: Imprimerie impériale, 1849), at 491, 'IXe siècle'; Huglo, 'La tradition musicale aquitaine', at 259, 'IXe siècle'; David Hiley, *Western Plainchant. A Handbook* (Oxford University Press, 1993), 597, '9th c., second half'; John A. Emerson, *Albi, Bibliothèque Municipale Rochegude, Manuscript 44* (Ottawa: Institute of Mediæval Music, 2002), 'ca. 890'. Emerson undertook some palaeographical and codicological analysis, comparing the manuscript to others made in the ninth century, but it remains to be determined to what extent the low quality of the writing in Albi 44 would allow it to be dated with such certainty alongside those manuscripts.

[62] *BK* I, p. 11.

[63] 'Script 3.', *Oxford English Dictionary*, ed. J. A. Simpson and E. S. C. Weiner (Oxford: Clarendon Press, 1989), vol 14, 741.

[64] Bischoff, *Paläographie, passim.*

[65] *Ibid.*, 71; some parts of this translation from Bernhard Bischoff, *Latin Palaeography. Antiquity and the Middle Ages*, trans. Dáibhí Ó Cróinín and David Ganz (Cambridge University Press, 1990), 54.

[66] See further below, pp. 185–91.

there are two quite different approaches among ninth-century examples.[67] Since this second characteristic is as significant in the garnering of information from a written record as the first, it needs to be integrated into consideration of the identity of different notations: the process of distinguishing notations should be a matter not only of morphology but also of the ductus within and between series of neumes.

In the lists of examples of music notation written in the ninth century set out below, the concept of a script, and thus the distinction between different scripts, has been based on three parameters: (a) the principle of sound capture; (b) principles of pitch signification, by sign and by placement; (c) ways of writing the most basic signs for single notes or short passages. This has allowed division of the over one hundred examples into groups, without depending on information about origin and provenance, which is often hard to come by. In a very few cases, above all notations written into song collections, a notation may seem to combine graphic features of different script types: these notations can often be read not as mixtures that combine different features from more established and fixed script types but as elementary scripts reflecting foundational elements common to a series of script types.[68] Such examples are signalled in the tables by an asterisk. A brief explanation of the manner in which each individual script can be recognized and distinguished precedes each list, with an image of one ninth-century example.[69] Although it is not the aim of this monograph to make an extensive study of individual scripts and their variations as written in different centres, more detailed consideration of each script will be found in Part II below. Finally, much of the bibliography on these individual scripts is based on study of later manuscripts, and will only be cited selectively, in relation to specific issues.

3.6 EVIDENCE OF MUSIC NOTATIONS WRITTEN IN THE NINTH CENTURY: MANUSCRIPT SOURCES

The need to carry out careful palaeographical study of individual manuscripts has shaped all the work that underlies this monograph: of the over one hundred sources of music notation that will be reported on below, I have directly examined almost all, with only a small number seen only in digital images. In the lists set out below, information about dating is provided mainly from Bischoff's *Katalog*, or, in view of the problems encountered in the second part of the third volume (manuscripts in libraries after Paris), from his own notes in the *Nachlass*.

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[67] See Susan Rankin, 'On the Treatment of Pitch in Early Music Writing', *Early Music History* 30 (2011), 105–75.

[68] On the concept of an elementary script, see especially Armando Petrucci, 'Libro, scrittura e scuola', in *La scuola nell'Occidente latino dell'alto medioevo*, Settimane di Studio del centro Italiano di Studi sull'alto medioevo 19 (Spoleto, 1971), 313–37, trans. as 'Book, Handwriting and School' in his *Writers and Readers in Medieval Italy*, ed. and trans. Charles M. Radding (New Haven and London: Yale University Press, 1995), 59–76.

[69] Many more images organized by script type (but not restricted to examples of the ninth century) can be found in Corbin, *Die Neumen* and Stäblein, *Schriftbild*.

If for any reason it is necessary to qualify Bischoff's judgement, a note is made. In the case of additions made to manuscripts, Bischoff's dating of the main material is given. If the added material is linked with a dateable text hand, then a further date for the music notation is given, based on my own palaeographical examination and advice from palaeographers; if, however, the added notation is not linked with a text hand, and there is no foolproof way of dating the notation, that is signalled by 'nu' (neumes undateable). In many cases these neumes may be more or less contemporary with the manuscript; such a case is the notation on fol. 251v of the Echternach Sacramentary (BNF lat. 9433),[70] or on fol. 174v of the Achadeus Psalter (Cambridge Corpus Christi College 272) where the spacing of syllables leaves no doubt about the intention of the scribe to enter neumes. In other situations it may be hard to tell when the neumes were entered: sometimes there is further evidence in a manuscript that will suggest a later date. In such cases these are not considered 'undateable' and have been excluded. Of course, there are certainly cases listed here in which the 'undateable neumes' were written later, but I have tried to reduce the possible examples to a minimum.

Manuscripts or additions in manuscripts that were made in the ninth century, and those which have been assessed palaeographically as dating from the end of the ninth or early tenth century, are shown first in the lists, followed by those that were certainly not made in the ninth century but possibly early in the tenth. Since it was never my intention to make an inventory of notations written in the first quarter of the tenth century, this category is certainly incomplete, and generally used here to show exclusions. For many of the manuscripts listed there is extensive bibliography: rather than attempt to provide such information here, I have chosen to cite each manuscript with the catalogue number from Bischoff's *Katalog*, where some further bibliography is cited. Where the manuscript does not appear in the *Katalog*, another reference is provided.

3.6.1 Palaeofrankish Script

The script now known as 'Palaeofrankish' is identifiable through its use of straight (or, more usually, slightly curved) strokes that slant upwards and downwards to the right to signify movement upwards and downwards; a downward stroke written like a large comma is often a strong indication of this script type.[71] The script is also full of simple dots and dashes,

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[70] In his notes on BNF lat. 9433 Bischoff wrote 'wohl gl[eich]z[eitige] Neumierung', and 'Dom Beyssac wie St Amand', revealing that he had in some way been in touch with Dom Beyssac (whose denomination for this kind of script, later named 'Palaeofrankish', was 'neumes de St Amand'). See fiche 38 in Arno Mentzel-Reuters (ed.), *Handschriftenarchiv Bernhard Bischoff*, MGH Hilfsmittel 16 (Munich: MGH, 1997), now also online. Passages of notation on fols. 20v and 21v of lat. 9433 are in a Frankish script.

[71] On the identification of this script in the 1950s, see above, pp. 40–41. The main studies of Palaeofrankish script are Handschin, 'Eine alte Neumenschrift'; Jammers, *Die Essener Neumenhandschriften* and 'Die palaeo-fraenkische Neumenschrift'; Hourlier and Huglo, 'Notation paléofranque'; Ferretti, *Una notazione neumatica della Francia del nord*; Atkinson, 'Excursus: Aurelian and the Paleofrankish Script', in his *The Critical Nexus*,

including their combination for 'compound neumes'. The signs are usually placed higher and lower, syllable by syllable, in some relation to the pitch of the notes they signify. Examples of this script can be seen in Figures 6, 18, 29 and 31. Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 2.

This type of music script is found in manuscripts from a broad geographical area stretching across northern Europe: the host manuscripts come from St Amand (Valenciennes 148 and BNF lat. 2291),[72] Corbie (BNF lat. 7501) and another northern French or Belgian centre (Düsseldorf Universitätsbibliothek D1), Echternach (BNF lat. 9433), Werden (Berlin Staatsbibliothek theol. lat. fol. 366) and possibly Corvey (Wolfenbüttel HAB cod. Guelf. 476 Helmst. (*olim* 510)). Both of the notated books represented in this list (Vienna ÖNB 612, Wolfenbüttel 476) are of Eastern Frankish origin. These examples show the script being used for a wide range of functions, from simple cues for hymns to the elaborate notation of office and mass responsories, from lengthy untexted passages and pen trials to the music theory text transmitted under the name of Aurelian of Réome.

The notation of the *Doxa* in BNF lat. 2291 is likely to date from a period close to the production of the manuscript: this can be argued on grounds of provenance. The book was made at St Amand, probably for Gozlin (Gauzlin), appointed abbot there between 868 and 871;[73] he was also abbot of St-Germain-des-Prés, and later bishop of Paris (884–6). Additions at the beginning include mass prayers for St Germain (fol. 5) and a list of the bishops of Paris (fol. 6v); the last entry made by the first scribe of the list is Gozlin himself. It is evident that the book was in Paris well before 900. An entry made on fol. 1v is notated in Frankish neumes, and was probably written in Paris. The Palaeofrankish neumes, much more closely connected with St Amand than Paris, were probably written before the book was sent away for Gozlin.[74]

3.6.2 Breton Script

The script now known as 'Breton' is graphically similar to Palaeofrankish and Lotharingian scripts, and shares with both of those scripts the habit of relative diastematy, that is, the

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106–13; Arlt, 'À propos de la notation "paléofranque"'; Ekaterina Chernyakova, *Palaeofrankish Musical Notation in the Manuscripts Düsseldorf, Universitäts- und Landesbibliothek D 1, D 2 and D 3*, unpublished PhD dissertation (University of Cambridge, 2015).

[72] BNF lat. 2291 was made at St Amand, but destined for St-Germain-des-Prés: see Jean Deshusses, 'Chronologie des grands sacramentaires de Saint-Amand', *RB* 87 (1977), 230–37, and *idem*, 'Encore les sacramentaires de Saint-Amand', *RB* 89 (1979), 310–12.

[73] Deshusses, 'Chronologie', 236.

[74] On fol. 1v low down on the page, the responsory *Sancte Germane* (not the entry higher up the page, which appears to have copied this).
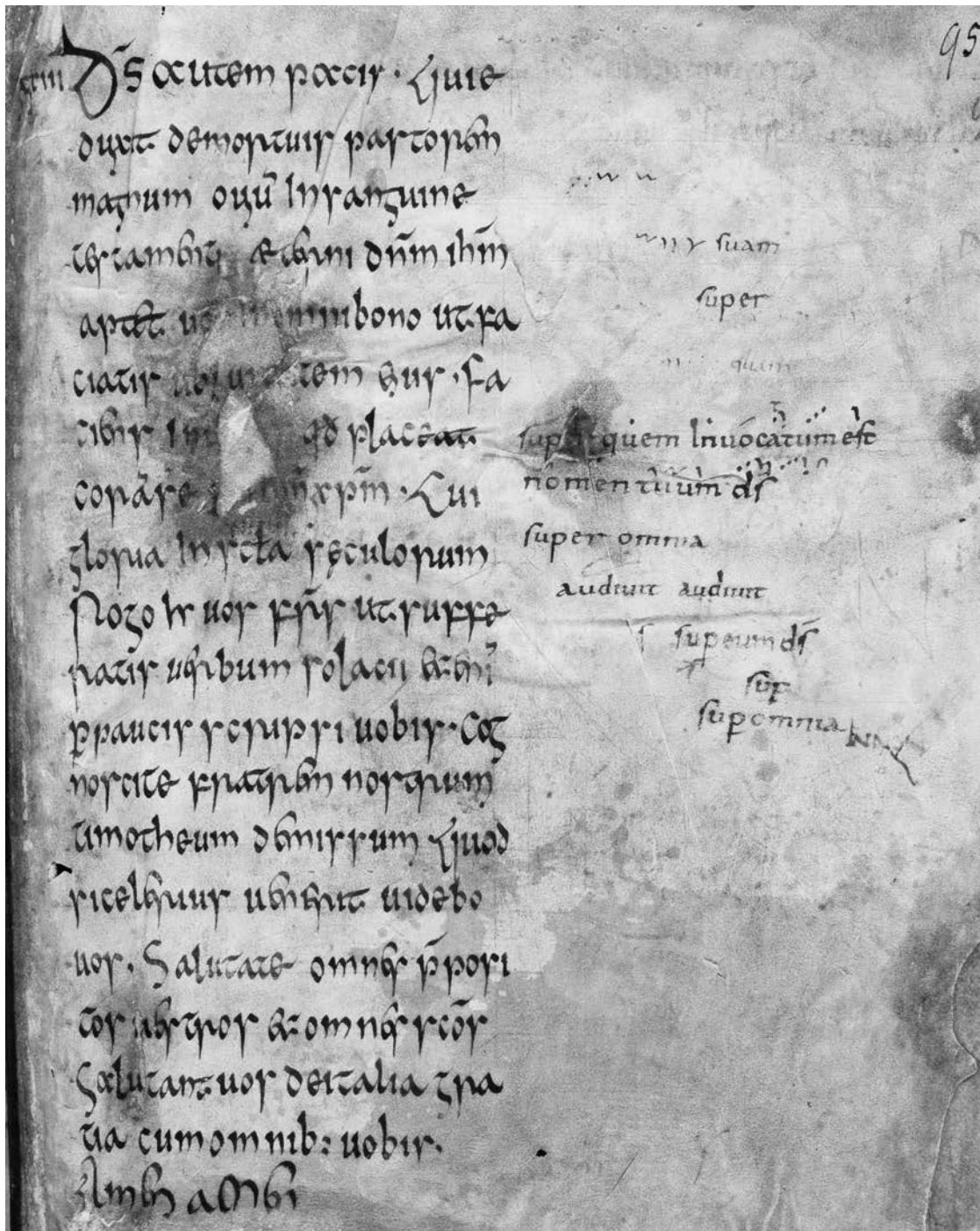
Figure 6 Berlin, Staatsbibliothek Preußischer Kulturbesitz (SBB–PK) ms theol. lat. fol. 366, fol. 95r.

Table 2 Palaeofrankish script in ninth-century manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Vienna ÖNB 612 fol. 74 (endleaf)	Antiphoner (half folio fragment)	s.ix ¾		7143	Germany
ADDITIONS					
Berlin SB PK theol. lat. fol. 366 fol. 1r	*Versus Aeterna christi munera*	s.ix ¼	nu	463	Werden
Berlin SB PK theol. lat. fol. 366 fols. 17v, 18r, 93v, 94r, 95r–v	Melismas, Offertory chant	s.ix ¼	s.ix *ex* /x *in*	463	Werden
Bern BB 455 fols. 10v, 13r, 32r	*Versus Ihesu redemptor omnium, Nocte surgentes, O crucifer bone*	s.ix ⅔	nu	599	France (Parisian region?)
Düsseldorf UB D1 fols. 185v–186r	Antiphons *Suscipiat te, Chorus angelorum*	868–72	s.ix *ex*	1069	Belgium/ NE France
Paris BNF lat. 2291 fols. 12v, 14v, 16r	Cues in chant list, *Doxa*	875–7	s.ix ⁴⁄₄	4157	St Amand
Paris BNF lat. 7501 fol. 155r (lower margin)	Pen-trials in Priscian *Institutiones*	s.ix ¾	nu	4453	Corbie
Paris BNF lat. 8318 fol. 64r	*Versus Quem terra pontus aethera*	s.ix *med*	nu	4540	West France (Loire)
Paris BNF lat. 8319 fol. 37r	*Versus Gloria laus et honor*	s.ix ²⁄₄	nu	4543	East France
Paris BNF lat. 9433 fol. 251v	Chant *Requiem domine*	895–900	nu	4587	Echternach

Table 2 (cont.)

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
Valenciennes BM 148 fols. 71v, 72r, 84r	Passages in Aurelian *De musica disciplina*	s.ix ⅔-*ex*	nu	6344	France
Valenciennes BM 150 fol. 36r	Melisma without text	s.ix ¼	nu	6345	prob. court
Valenciennes BM 170 fol. 199v	Antiphon *Factum est cum una*	s.ix ¼	s.ix 4/4-*ex*	6358	St Amand
Wolfenbüttel HAB Aug. 8° 56.18 fol. 8v	*Versus Pastis uisceribus ciboque*	s.ix *med*	s.ix ⅔	7299	Ferrières

AFTER 900

NOTATED BOOKS

| Wolfenbüttel HAB Guelf. 476 Helmst. | Gradual (fragment of 2 folios) | after 900 | | | |

placing of signs higher and lower on the page in some relation to their pitches.[75] Among the graphic signs that distinguish this script from these other two, the most important is the *uirga* or short line written perpendicular or more often slightly slanting to the right. Written on its own over one syllable, indicating one note, this is not present in either Palaeofrankish or Lotharingian scripts. The signs for two ascending and two descending notes are written in 'square' (or 'angled') shapes, as a horizontal line followed by a vertical (or slanted) line, moving up or down. Groups of descending notes are usually written as a series of dots or dashes (or dots and dashes combined). Examples of this script can be seen in Figures 7, 18, 26, 27 and 32. Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 3.

It is difficult to associate this script with an area defined more narrowly than western Francia: after the ninth century the use of this script became restricted to Brittany, but during the ninth century it was written much more widely. The region west of Tours, including Brittany, is represented in this list by the Leiden antiphoner fragment (Bibliothek der Rijksuniversiteit BPL 25), the Oxford scrap (Auct. F.4.26), the addition of neumes for Christ's cry from the cross 'Heli heli' (New York Public Library 115), and the addition of neumes for the Matthew genealogy in two gospel books (BNF lat. 261 and Paris Bibliothèque Sainte Geneviève 17): in both of the latter the neumes are undatable. Other parts of the western Frankish area, north and south, are represented by a gospel book made in Lyon and used in Arles (BNF lat. 2812), the *Fabrice* melismas written into a book made in Clermont-Ferrand (BNF lat. 4697), notation for the Matthew genealogy written into a book made in the Loire region (BNF lat. 894) and finally, in the north-east, an appendix of prayers and chants for the *triduum sacrum* added to a book made in Reims (Paris Bibliothèque Mazarine 1707). Since in the case of the manuscripts in which the music notation is original, none can be linked with a specific institution,[76] and additions to manuscripts are even more difficult to pin down in this respect, secure information about exactly where this script was being written in the ninth century is difficult to find. Nevertheless, the extremely pronounced geographical spread of the extant early examples suggests that this should not be treated simply as a 'regional' script, at least not in the ninth and early tenth centuries.

[75] On this script, see Amand Ménager, 'Étude de la notation du manuscrit 47 de Chartres', in *Antiphonale missarum Sancti Gregorii, Xe siècle: codex 47 de la Bibliothèque de Chartres, PM* 11 (Tournai: Desclée, 1912); Michel Huglo, 'Le domaine de la notation bretonne'; on the manuscript sources, see also Jean-Luc Deuffic, 'La notation neumatique bretonne: manuscrits et centres de diffusion (x^e–xiie siècle)', in John Haines (ed.), *The Calligraphy of Medieval Music*, Musicalia medii aevi 1 (Turnhout: Brepols, 2011), 63–90.

[76] Of the origin of Chartres 47, the earliest extant gradual notated in this script, little is known: in the study by Georges Benoît-Castelli and Michel Huglo, 'L'origine bretonne du Graduel N° 47 de la Bibliothèque de Chartres', *EG* 1 (1954), 173–8, the post-Pentecost Alleluia list is argued to be the basis for a link with Rennes; but the books with which Chartres 47 is compared in this study are all later, and it may itself represent a tradition brought into Brittany after the book was made.
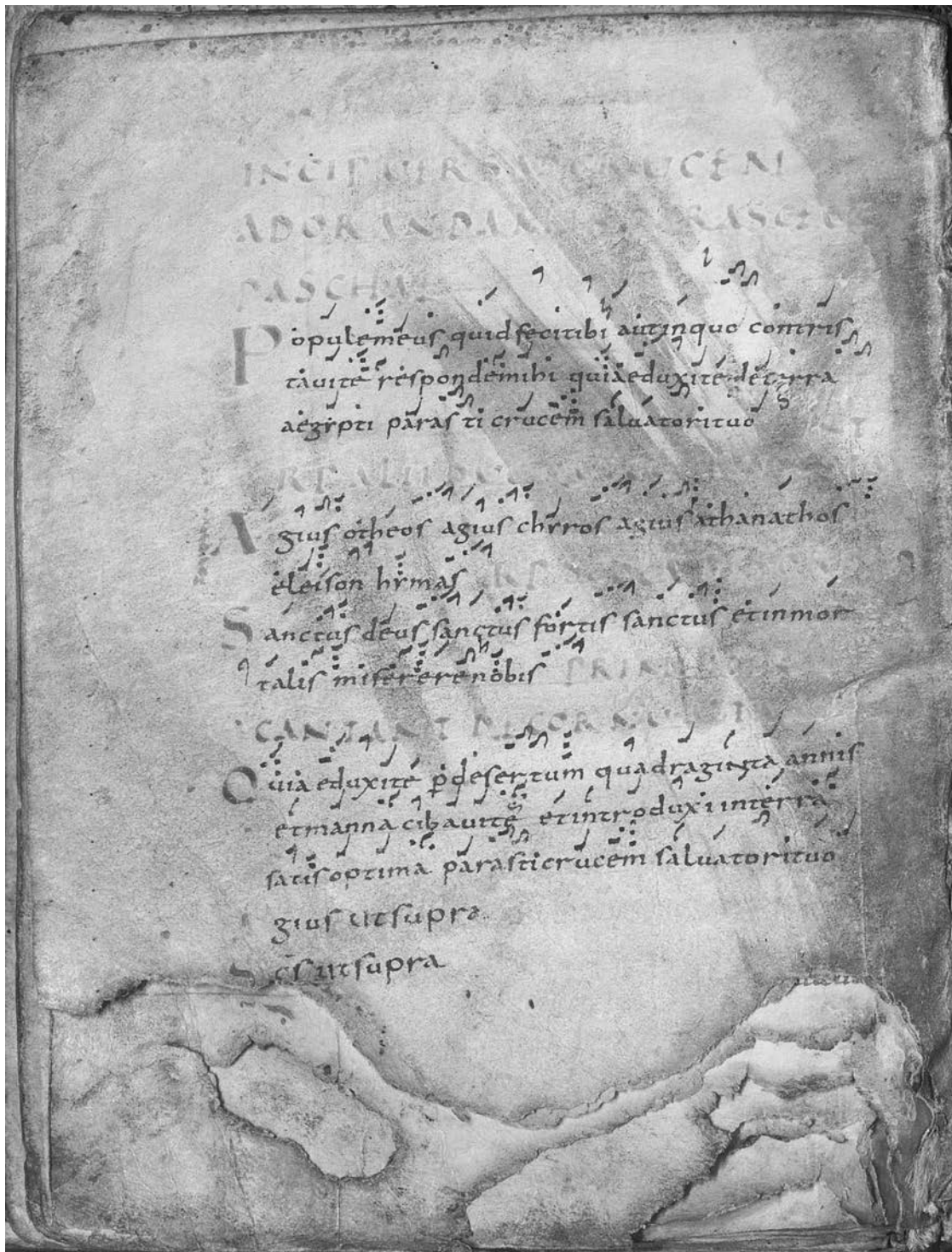
Figure 7 Paris, Bibliothèque Mazarine ms 1707, fol. 90v.

Table 3 Breton script in ninth-century manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Leiden BRU BPL 25 fols. 1, 42, 43	Antiphoner (three folios)	s.ix ¾		2135	perhaps NW France
Oxford BL Auct. F.4.26 front endleaf	Antiphoner (one folio)	s.ix ²⁄₄		3773	W France
Paris Mazarine 1707 fols. 89v–91r	Easter liturgy	s.ix ¾		3939	Reims
Paris SG 223 fols. I, II, 99, 100	Antiphoner (eight folios)	s.ix ¾		5166	France
Valenciennes BM 407 endleaves	Gradual (bifolium)	s.ix ²⁄₂		6395	N France
ADDITIONS					
New York Public Library 115, fol. 48	Reading (Matt. 27.46)	s.ix ³⁄₃	s.ix ³⁄₃	3625	Landévennec
Orléans 221 pp. 1, 212	Melismas without text	s.ix *med*	nu	3727	Brittany
Paris BNF lat. 261 fols. 19v–20r	Matthew genealogy	s.ix ¾	nu	3975	W France
Paris BNF lat. 270 fol. 70v	*Luke genealogy	s.ix ¾	nu	3984	N France
Paris BNF lat. 894 fol. 29v	Matthew genealogy	s.ix ²⁄₄	nu	3997	N France?
Paris BNF lat. 4697 fols. 22v, 26v–27r	*Pen-trial, *Tamquam/ Fabrice* melismas	s.ix ²⁄₂	s.ix *ex*	4326	prob. Clermont-Ferrand
Paris BNF lat. 7680 fol. 39r	*Versus Bachifer eia*	s.ix ³⁄₃	s.ix *ex*	4495	E France?
Paris SG 17 fols. 4r–5r	Matthew genealogy	s.ix ³⁄₃	nu	5162	Brittany
Vatican Reg. lat. 267 fol. 228v	Tironian note with neumes	s.vi/vii	s.ix/x	6647a CLA 104	France
AFTER 900					
NOTATED BOOKS					
Chartres 47	Gradual	s.x *in*			[W France]
St Gallen SB 1397 pp. 27–8	Antiphoner (bifolium)	s.x ½			

Table 3 (cont.)

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
ADDITIONS					
Bern BB 219 fol. 77r	Responsories for St Laurence	s.vii ex	s.x	553a	France
Laon BM 201 fol. 29v	Gloria	s.ix ⅔	s.x	2091	Cambrai
Paris BNF lat. 2812 fols. 96v–97r	*Exultet	s.ix ½	s.x or xi	4234	Lyon

What is much more clear about this script is its strong representation among the earliest examples of chant books prepared with music notation: besides the single folio from a small book copied in the second quarter of the ninth century (Oxford BL Auct. F.4.26), there are fragments surviving from two office antiphoners copied in the third quarter of the century and from a gradual copied in the last quarter. This, combined with its common use as a script for the notation of genealogies and the *Exultet* prayer, thus passages in books for priests, indicates a certain popularity. It appears that the Breton script was more widely used for standard ecclesiastical purposes (with the exception only of the drinking song *Bachifer eia* in BNF lat. 7680), in contrast to the wide variety of uses for the Palaeofrankish script (and a corresponding lack of use for standard ecclesiastical purposes).

3.6.3 Lotharingian Script

The script often known as 'Messine', but in this study named 'Lotharingian',[77] is graphically similar to both Palaeofrankish and Breton scripts but is more calligraphically stylish:[78] an easily recognized characteristic is the way in which the upwards stroke within compound neumes is written with a turn at each end, rather than as a simple line. The most clear identifying feature of Lotharingian script is the sign for one note written as a very short angled stroke that turns at the top towards the right and describes a short curve: this sign is unique to this script. As in both Palaeofrankish and Breton scripts, the Lotharingian script is

[77] In this I follow the proposal made in 1977 by Solange Corbin, who pointed out that there was no evidence to connect this script directly with Metz, and that the region in which this script was used was Lotharingia: Corbin, *Die Neumen*, 3.87.

[78] On this script see Ménager, 'Aperçu sur la notation du manuscrit 239 de Laon', and Hourlier, 'Le domaine de la notation messine'.

usually written with signs placed at different heights in relative correspondence with pitches denoted. Examples can be seen in Figures 3, 5, 8, 18, 25, 28 and 34. Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 4.

In contrast to the Breton script, which was written in far-flung places, the writing of Lotharingian script was much more confined: the triangle described by Laon, Reims and Soissons is certainly the centre of its use in the ninth century. Among these manuscripts Reims is represented by the Achadeus Psalter in Cambridge (CCC 272) and the decorated quire signatures in a gospel commentary (Valenciennes BM 72); Soissons is represented by a hymn added at the end of a collection of school texts (Berlin Staatsbibliothek, now Krakow Biblioteka Jagiellońska, Berol. lat. qu. 687) and the *Fabrice* prosulae added in a book of sermons (CSG 614). Laon is represented by the four Laon graduals, full or fragmentary: while the origin of the fragments Laon BM 9, 121 and 266 is unclear, all these are from books that were discarded and used as binding material in Laon. All three were certainly written in north-east France, and possibly at Laon itself, while the origin of the full Gradual, Laon 239 at Laon Cathedral has been argued on the basis of content.[79] Three cases sit outside of that circumscribed region: it is possible that the two St Denis manuscripts in which this script was used for additions (Leiden Bibliotheek der Rijksuniversiteit Burm Q.3 and BNF lat. 18554) were either actually taken north when the monks of St Denis fled to the Reims/Laon region on more than one occasion in the late ninth century,[80] or written in by monks from the Reims/Laon region when they visited Paris. Movement between Paris and this north-east region may also explain the presence in the song collection Bern Burgerbibliothek 455 of Palaeofrankish, Frankish and Lotharingian notations, the first two types possibly written before the manuscript was taken north, and the Lotharingian notations once it came to Laon in some association with Adelelm, whose hand appears in it.[81] Finally, Bischoff considered the copy of Prudentius's *Psychomachia* in BNF lat. 8318 to come from west France, probably the Loire area.

In this list the concentration of chant books made in Laon is striking, but so also is the other main use of this script, for the notation of hymns and songs, especially those of metrical interest. This suggests a close association with schools, a possibility that is borne out by the nature and quality of some of the examples. That this is not a foundation script, but a refined form based on a foundation script, will be argued

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[79] See *PM* 10, 33–35.

[80] For example, they were in Reims during 887–90; see Michel Félibien, *Histoire de l'abbaye royale de Saint-Denis en France* (Paris: Frederic Leonard, 1706), 99, and for more general information on this period, Anne Walters Robertson, *The Service-Books of the Royal Abbey of Saint-Denis* (Oxford: Clarendon Press, 1991), 42–3.

[81] See Sam Barrett, 'Neumes in a Ninth-Century Verse Collection and the Early History of Messine Notation at Laon', *EG* 40 (2013), 161–89.
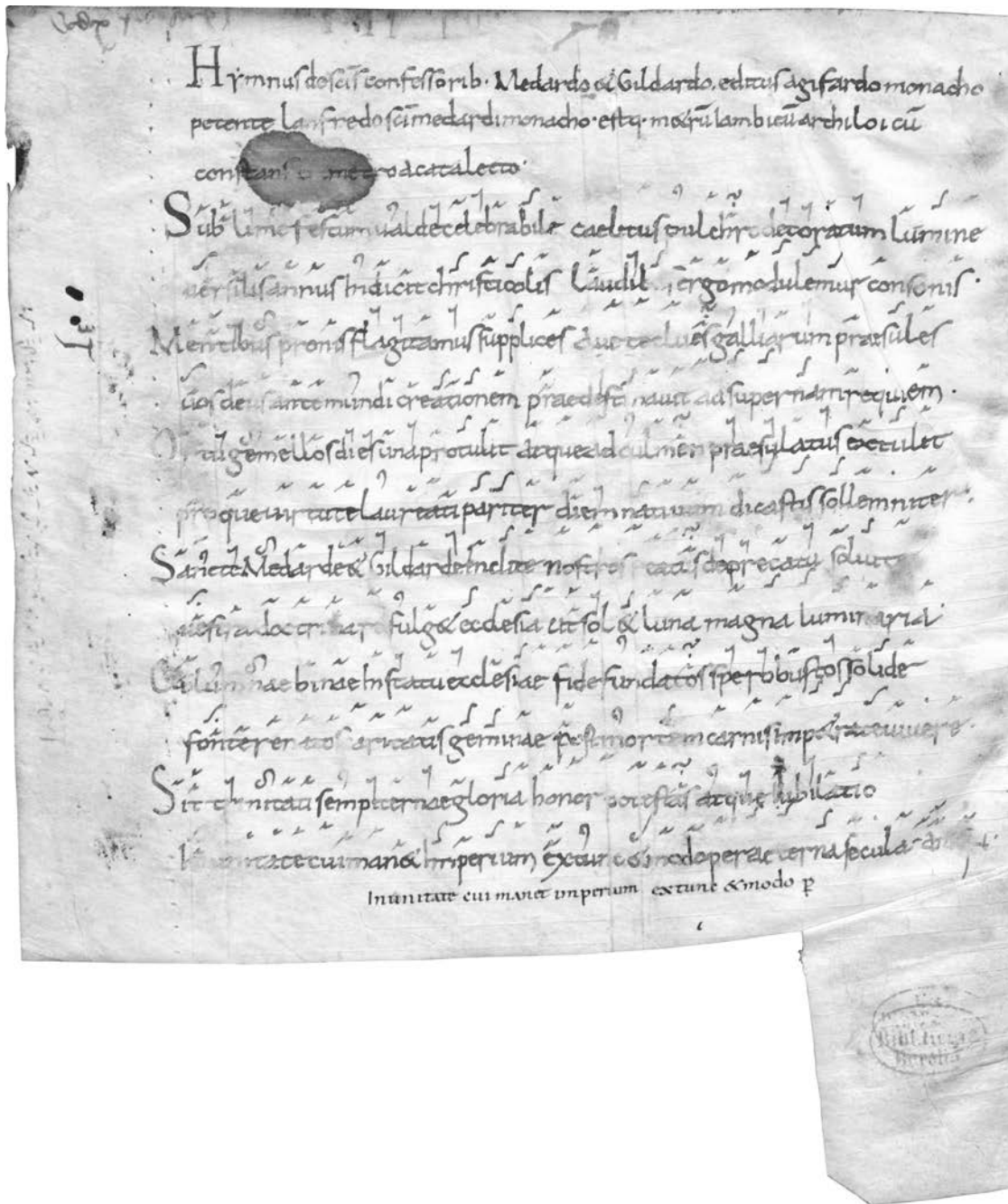
Figure 8 Berlin, Staatsbibliothek Preußischer Kulturbesitz (now Krakow, Biblioteka Jagiellońska) ms Berol. lat. qu. 687, fol. 85v.

Table 4 Lotharingian script in ninth-century manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Cambridge CCC 272 fol. 174v	Psalter (one office responsory neumed)	883/884	contem.	817	Reims
Laon BM 9 back endleaf	Gradual (two folios)	s.ix ⁴/₄			
Laon BM 121 front endleaf	Gradual (two folios)	s.ix ³/₃		2078	NE France (Laon?)
Laon BM 239	Gradual	s.ix ⁴/₄		2094	NE France
Laon BM 266 front endleaf	Gradual (two folios)	s.ix ⁴/₄		2097	NE France (Laon?)
ADDITIONS					
Bern BB 455 fols. 20r, 21r, 22r, 26r–v, 27v, 29r–v, 31v, 41r	*Versus*	s.ix ²/₃	s.ix *ex*/s. x *in*	599	France (Parisian region?) and Laon
Berlin SB (Krakow BJ) lat. qu. 687 fol. 85v	*Versus Sublime festum*	s.ix ³/₄	s.ix ⁴/₄	392	France
Laon BM 121 fol. 65v	Melisma without text	s.ix ³/₃	nu	2079	NE France?
Leiden BRU Burm. Q.3 fols. 20v, 21r	*Versus Cultor dei memento, O nazarene lux*	s.ix ²/₄	nu	2177	St Denis
London BL Add. 16605 fols. 1v–3r	*Exultet*	s.ix ³/₄	nu	2367	Stavelot
Paris BNF lat. 8318 fol. 57r	*Versus Ad celi clara*	s.ix *med*	nu	4540	W France (Loire)
Paris BNF lat. 18554 fol. 54v	*Versus A solis ortu	s.ix ²/₂	nu	5059	St Denis
Paris BNF nal. 1632 fol. 25v	*in marg.* 'luciane'	s.ix ²/₄	s.ix ⁴/₄	5109	France
St Gallen SB 614 p. 48	*Fabrice* prosulae	s.ix *med*	s.ix ²/₂	5814	Soissons?
Valenciennes BM 72 fols. 16v, 24v, 32v, 40v, 48v, 71v, 79v, 87v, 95v, 103v	Decorated quire signatures	s.ix/x	s.ix/x	6333	Reims region
AFTER 900					
ADDITIONS					
Laon 55 fol. 105r	Pen-trials	s.ix ²/₃	s.x	2055	prob. NE France
Paris BNF lat. 17436 fols. 24r, 29r–30r	Prose and sequences	870s	s.x	5018	Soissons region (court of Charles the Bald)

below:[82] the clustering of the manuscripts, combined with the calligraphic character of this script, all point to its development and use in a centre which acted as a fully fledged scriptorium.

3.6.4 Aquitanian Script

The script now known as 'Aquitanian' is the final member of the Palaeofrankish, Breton, Lotharingian group, and shares with those scripts an approach to the placement of signs, moving them up and down syllable by syllable. The domination of this script by dots renders its visual appearance quite distinct. An example of this script can be seen in Figure 9. There are no examples of this script that can be dated securely to the ninth century: even in the Antiphoner and Gradual Albi 44, copied not long after 900, and in some parts clearly intended for music notation, the addition of that notation is sporadic and made by a series of different hands, rather than in a sustained campaign. The notations in this manuscript are in a form described by Colette as 'proto-aquitainian'.[83] The region in which this script was written is south-west France: the Tours gospel book (BNF lat. 260) was at St Martial de Limoges, possibly as early as 923,[84] while BNF lat. 1154 also has a west Frankish origin and was later taken to Limoges. The Albi book was made for Albi, and has stayed there. Examples are listed in Table 5.

Table 5 Aquitanian script in ninth-century manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
ADDITIONS					
Paris BNF lat. 260 fols. 74r, 79v (not 107r)	Gospels	s. viii/ix	nu	3974	Tours
AFTER 900					
NOTATED BOOKS					
Albi BM 44	Gradual and Office Antiphoner	s.x *in*		I p.11	[Albi]
ADDITIONS					
Paris BNF lat. 1154	*Versus*	s.ix *ex/* x *in*	nu	4006	W France (perhaps Limoges)

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[82] See ch. 6 this volume.
[83] Colette, 'Le Graduel-Antiphonaire, Albi, Bibliothèque Municipale, 44'.
[84] See the 'informations détaillés' on the *Gallica* website.
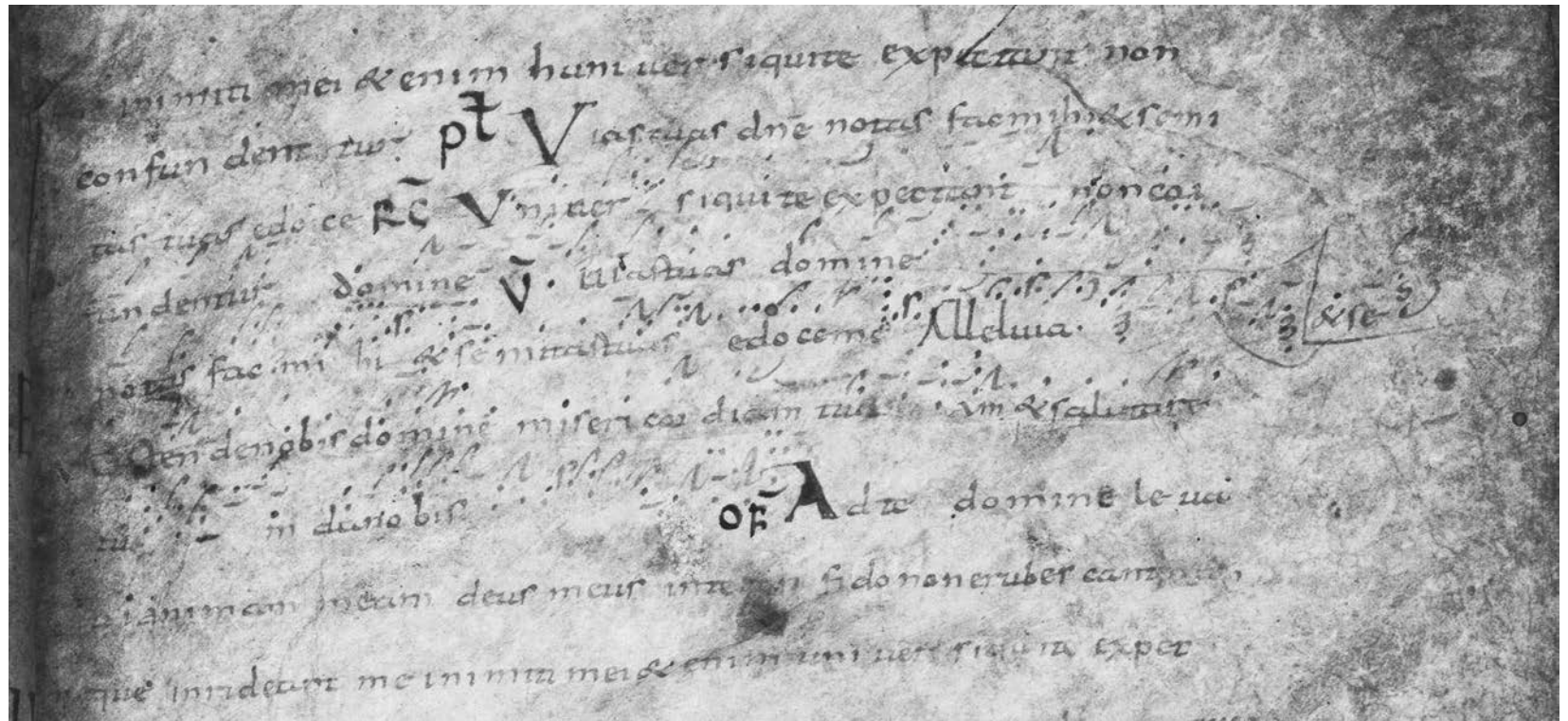
Figure 9 Albi Médiathèque Pierre-Amalric, Rochegude ms 44, fol. 2r.

3.6.5 Frankish Scripts

The term 'Frankish' has not previously been used to describe music notations. There are many ways in which this one script type came to be written with regional and local variations, and it is under names related to the regional versions rather than to script type that it has most often been described,[85] thereby obscuring their essential relationship. Naming by script would therefore encourage understanding of the development of this way of writing musical signs into a variety of distinctive forms during this earliest period of its use. The tables below are organized by region, without paying attention to variations of sign use and ductus (which will be considered in Part II): they are therefore divided into West Frankish ('French'), East Frankish ('German'), 'Italian' for notations written in northern Italy, and 'Old Hispanic' for notations written in the Iberian peninsula.

This script has many features that distinguish it from those already described, but the fundamental qualities which set it apart are two. The first is the use of a pair of referential signs – a dot ('*punctum*') and a short perpendicular or slanted line ('*virga*'): each of these signs indicates a single note, but their juxtaposition allows the differentiation of higher and lower pitches without depending on the height at which they are placed in the space above the text. The second is the way in which signs are placed in the space above the text: with some degree of modification, but always in a clear way, signs for successive syllables are set low, just above the text, with successive signs for the same syllable moving upwards in a diagonal or curved line. Only in a small number of cases (such as the song notations in Naples Biblioteca Nazionale IV.G.68) is this scribal procedure for the placing of signs ignored: such cases will be discussed further below.[86]

3.6.5.1 West Frankish Examples

As written in many West Frankish centres, this script is usually named 'French'.[87] It can be written with upwards movements perpendicular or slightly tilted to the right and downward movements also perpendicular or slightly tilted to the right, in other words parallel to those moving upwards, but it is important to recognize that ninth-century examples often show considerable freedom and may mix angles. In the Graz fragment, written by a very competent scribe, the simple upwards strokes lean heavily to the right while more extended graphic signs involving ascent such as that for low–high have ascenders written perpendicular

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[85] These regional names are set out in the regionally defined sections that follow below.

[86] See below, pp. 137–42.

[87] Corbin, *Die Neumen*, 3.100ff: 'Die "französischen" Neumen'; Stäblein, *Schriftbild*, 110: 'Französische Neumen'; Colette, 'Élaboration', 79: 'Notations françaises'. The main study dealing with the West Frankish examples of this script is Corbin's thesis, *La Notation musicale neumatique*.
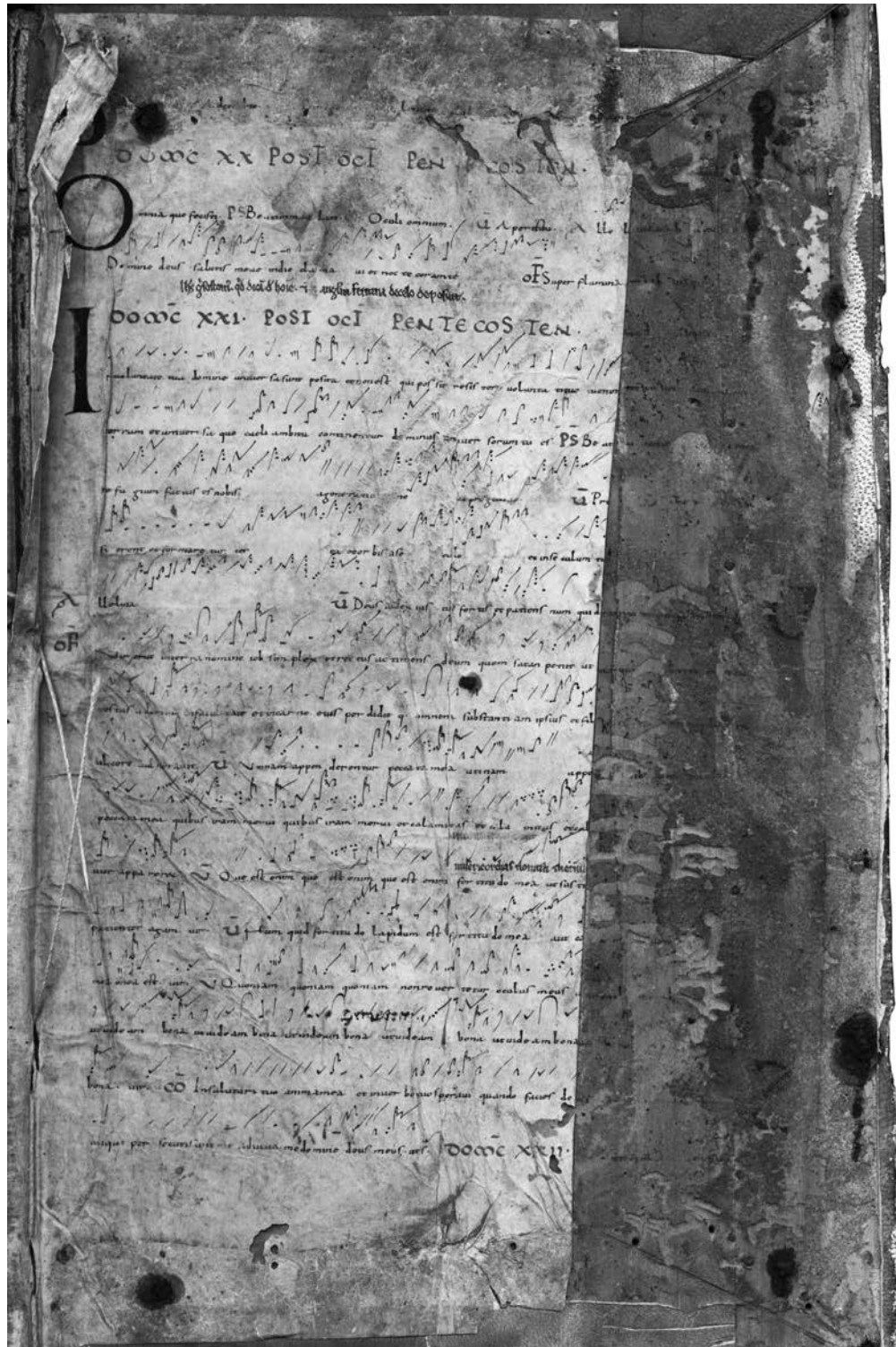
Figure 10 Graz, Universitätsbibliothek ms 748, back pastedown.

to the horizontal line (see Figure 10). In contrast, in the notation for *Alleluia V. Ego sum pastor bonus* written into Autun BM S28 in the third quarter of the century, the upwards and downwards strokes are all in parallel. The marginal annotation in BNF nal. 1586 can be dated, on the basis of its text hand, between 820 and 850.[88] This sets it as one of the three earliest extant examples of neumation, but, unfortunately, the entry is very short. Examples of this script can be seen in Figures 10, 23 and 24. Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 6.

This music script was written in central and northern France: the centres include, along the Loire, Tours (BNF lat. 250, lat. 9430, nal. 1586), Fleury (Bern Burgerbibliothek 338, Vatican BAV Reg. lat. 215 from Tours or Fleury, and Reg. lat. 321) and Ferrières (Wolfenbüttel HAB Aug. 8° 56.18); in the Parisian region St-Germain-des-Prés (BNF lat. 2291, sent from St Amand, lat. 13745, Vatican BAV Ott. lat. 313) and St Denis (BNF lat. 18554); and, in the north, Corbie (BNF lat. 8051, lat. 8670, lat. 13024, lat. 13377).[89] To the south two examples may have been written at Lyon (BNF lat. 2832, and possibly the pen-trials in Munich Universitätsbibliothek 2° Cod. ms. 34). It is clear that the script was anchored in a number of major monastic centres, and was being used for all sorts of purposes. In this sense, the fact that no fully notated chant book made in this period in this large area has survived must be considered the result of loss: it is inconceivable that no such book was made. Alongside the many examples of notated *versus* – hymns, metra, other kinds of song – there are also several examples of chants and of the relatively new genre of sequence with notation added in margins or empty spaces.

3.6.5.2   East Frankish Examples

Written with upwards movements heavily slanted to the right and downward movements slanted down to the right, this script was written in many East Frankish centres. Since much of the study of this notation type has depended on manuscripts from Sankt Gallen,[90] the script has often been described as 'Sankt Gallen' notation, although surveys have generally noted the direct relation of Sankt Gallen notations to those written in many East Frankish centres, and thus used the more general term 'German'.[91] Examples

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[88] Caroline minuscule in the margin of a Tours copy of the major prophets copied before 800. The entry is too short to allow secure identification of the marginal hand as from Tours; equally there is nothing to take it away from Tours.

[89] On Corbie notations see Colette, 'Les fragments et additions marginales notés'.

[90] Among the many studies of the Sankt Gallen notations, of which more will be cited in Part II below, the seminal study (even if not palaeographical in nature) is Cardine, 'Sémiologie grégorienne'.

[91] See Corbin, *Die Neumen*, 3.45ff; Stäblein, *Schriftbild*, 182: 'Deutsche Neumen'; Colette, 'Élaboration', 74: 'Notations germaniques et sangalliennes'. See also Hartmut Möller, 'Deutsche Neumen – St. Galler Neumen. Zur Einordnung der Echternacher Neumenschrift', *Studia musicologica academiae scientiarum Hungaricae* 30 (1988), 415–30; and *idem*, 'Deutsche Neumenschriften ausserhalb St. Gallens', in Peter Cahn and Ann-Katrin Heimer (eds.), *De musica et cantu. Helmut Hucke zum 60. Geburtstag* (Hildesheim: Olms, 1993), 225–42.

Table 6 Frankish script in ninth-century West Frankish manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Graz UB 748 front and back pastedowns	Gradual (two folios)	s.ix/x or s.x *in*		1457	France
Leipzig UB 1609 fol. 1	Antiphoner (one folio)	s.ix/x			
Munich BSB clm 14735 fols. 9–28	Gradual (10 folios, palimpsested)	s.ix/x		3254	prob. France
ADDITIONS					
Autun BM S3(4) fols. 25r–v, 78r, 198r–v	Gospel readings	s.viii	nu	CLA 717	Flavigny?
Autun BM S28 fol. 64r	*Alleluia V. Ego sum*	s.vii	s.ix ¾	158a	S France, then Autun
Autun BM S28 fols. 22v, 50r, 63v, 64r, 87r, 94v	Chants and sequences	s.vii	s.ix *ex*/ s.x *in*	158a	S France, then Autun
Bern BB 36 fol. 139v	*Versus Sum noctis*	s.ix ¾	s.ix	493	prob. Auxerre or Fleury
Bern BB 338 fol. 11r	Pen-trial over 'De ortografia'	s.ix ⁴⁄₄	nu	577	Fleury
Bern BB 394 fols. 1v, 6v, 10r, 12r, 18v, 24r, 32r, 43r	*Versus Mecum Timavi*	s.ix/x	s.ix/x–s.x ¼	590	W France
Bern BB 455 fols. 13v, 32r–v, 33r–v, 34v–35r, 37r	*Versus* (Prudentius)	s.ix ²⁄₃	s.ix ³⁄₃	599	France (Parisian area?)
Munich UB 2° Cod. ms. 34 fol. 1r	Pen trials	s.ix *med*	nu	3521	Lyon
Orléans 169 front endleaf recto	Melisma without text (?sequence melody)	s.ix ¾	nu	3710	Loire region
Paris Arsenal 227 fols. 202r–204r	*Exultet*	s.ix ⁴⁄₄	s.ix/s.x	3915	Central France or Parisian region?
Paris BNF lat. 250 fols. 13v–14r	Gospel reading	830–40	nu	3970	Tours
Paris BNF lat. 2291 fol. 1v	Responsory for St Germanus	s.ix ¾	s.ix *ex*	4157	St-Germain-des-Prés
Paris BNF lat. 2373 fol. 1r	Sequence melodies	s.ix ¾	nu	4179	NE France (court?)
Paris BNF lat. 2373 fol. 3r	**Versus*	s.ix ¾	s.ix ²⁄₂	4179	NE France (court?)
Paris BNF lat. 2832 fols. 62r, 68v (not 123v/124r)	*Versus*	s.ix *med*-¾	nu	4240	Lyon or St-Oyan

Table 6 (cont.)

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
Paris BNF lat. 5325 fols. 137r–142r	Cues in a homily	s.ix ²⁄₄	nu	4362	Tours
Paris BNF lat. 7193 fols. 33v–34r	Pen-trials	s.ix *in*	s.ix *ex*	4429	in the vicinity of the court
Paris BNF lat. 8051 fols. 22v, 56r	*Versus O mihi desertae, Huc adtolle genas*	s.ix *med*–¾	nu	4521	Corbie
Paris BNF lat. 8087 fol. 22r	*Versus O nazarene lux*	s.ix ²⁄₃	nu	4527	Channel coast
Paris BNF lat. 8670 fols. 4r, 5v, 6r, 10r, 11v, 14v, 109r	*Versus* in Martianus Capella *De nuptiis*	s.ix *med*–¾	nu	4554	Corbie
Paris BNF lat. 9430 fol. 267v	Antiphons *dum tondis*	s.ix ⁴⁄₄	s.ix ⁴⁄₄	4586	Tours
Paris BNF lat. 13024 fol. 119v	Pen-trials in *Ars grammatici*	s.ix ²⁄₄	nu	4859	prob. Corbie
Paris BNF lat. 13377 fols. 54v, 55v	*Versus A solis ortu cardine, Felix nimium*	s.ix ¼	nu	4905	Corbie?
Paris BNF lat. 13745 fol. 88v	*Versus Praecelsa Germani*	circa 865	nu	4930	St-Germain-des-Prés
Paris BNF lat. 18554 fol. 54v	**Versus A solis ortu cardine*	s.ix ²⁄₂	nu	5059	St Denis
Paris BNF nal. 1586 fol. 123r	*Versus (in marg.)*	s.viii *ex* + s. ix ½	s.ix *med*	5091a	Tours
Tours BM 184 (2nd sacramentary) fols. 7r, 11r, 12r–v, 13v, 51v, 52v–53r, 64v, 82r	Prefaces, *Exultet* prayer, chant cues	s.ix ⁴⁄₄	nu	4584	[Tours]
Vatican Ott. lat. 313 fols. 112–14	*Exultet* preface	s.ix ²⁄₂	nu	6438	St-Germain-des-Prés
Vatican Reg. lat. 215 fols. 130v–131r	Greek and Latin Credo	s.ix ⁴⁄₄	nu	6642	[Tours or Fleury]
Vatican Reg. lat. 267 fol. 228r	*Remisisti* (rep. for Off *Benedixisti*)	s.ix/x	s.ix/s.x	6647a CLA 104	France
Vatican Reg. lat. 321 fols. 2r, 4r–v, 5r, 6r, 7r, 9r, 10r, 53v, 54v, 66r	*Versus* (Prudentius)	s.ix/x	nu	6662	
Vatican Vat. lat. 3363 fols. VIv, XXVIr	*Versus* (Boethius)	s.ix ½	nu	6877	Loire region
Wolfenbüttel, HAB Aug. 8° 56.18 fols. 1v, 10r, 16v	*Versus* (Prudentius)	s.ix *med*	nu	7299	Ferrières

AFTER 900

NOTATED BOOKS

Autun BM S3(4) fols. 3–4	Gradual (two bifolios)	s.x *in*			
Leipzig UB Rep. I 93	Alleluias, Tracts etc	s.x *in*			

ADDITIONS

Paris BNF lat. 2373 fol. 3v	Gloria trope	s.ix ¾	s.x	4179	NE France (court of Charles the Bald?)
Paris BNF lat. 12193 fol. 165v l.6	Alleluias	s.ix *ex*	s.x	4764	Loire (Fleury?)
Paris BNF lat. 18554 fol.1r	Pen-trial (two voices)	s.ix ²⁄₂	s.x/xi	5059	St Denis
Tours BM 184 (3rd sacramentary) fol. 328r	Preface	s.ix *ex*	s.x	4585	Tours
Tours BM 184 (1st sacramentary) fols. 166v, 222v	Tracts *Adtende caelum* and *Laudate dominum*	s.x *in*	nu		[Tours]

of this script can be seen in Figures 4, 11, 14–18 and 20–2. Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 7.

Apart from Sankt Gallen and Reichenau, it is difficult to link this script with a series of institutions in the same way as the West Frankish examples; nevertheless, the region of its use is clearly outlined as southern Germany and Switzerland, stretching from Swabia (CSG 1397, pp. 13–16) to Sankt Gallen (CSG 50, CSG 359, CSG 397) and Reichenau (Vienna ÖNB lat. 1815), with Tegernsee as the eastern limit (Munich BSB clm 19408). The tiny number of undatable neumes for the *Exultet* in a Lorsch manuscript (Vatican BAV Pal. lat. 485) are hardly enough to support a claim for the use of notation at that abbey in the ninth century.[92]

That this script was already known in Bavaria in the first half of the ninth century is the inevitable conclusion from Bischoff's work on Munich 9543; the earliest Sankt Gallen example seems to be the notation of a passage from the Exultet preface in the *vademecum* of Grimald, abbot of Sankt Gallen between 841 and 872, setting the year of his death as the latest period by which knowledge of this script practice would have reached the abbey – but the notation was surely made earlier, before Grimald retired to the abbey.[93]

This script is used for a wide variety of purposes, from melismatic chant to short cues for the delivery of Prefaces. Perhaps the most unexpected example is the notation of a passage of the Benedictine Rule (Munich BSB clm 19408):[94] this is undatable, although Traube considered it to be potentially original.[95] It is with this type of script that a new spatial framework for music writing, proper to the repertory of sequences, appears (see Figure 11); the writing out of text and of music in separate columns reflects the way in which the new genre had come to life in the hands of Notker Balbulus. This new layout certainly dates from the late ninth century, within Notker's lifetime.

3.6.5.3   Italian Examples

The Frankish script model was also the basis for notations written in northern Italian centres. Many localized Italian music scripts found in manuscripts of the tenth and eleventh centuries do not depend on Frankish script, and were probably devised in the

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[92]   There are many examples of this script written at Lorsch in the later tenth and eleventh centuries, for example in BAV Pal. lat. 220.

[93]   See below, pp. 149–50.

[94]   See Ludwig Traube, *Textgeschichte der Regula S. Benedicti* (Munich: Bayerische Akademie der Wissenschaften, 1898), 57.

[95]   Punctuation of the text of the Rule, written by the original scribe, indicates that this manuscript was carefully prepared for public reading (presumably at chapter meetings).
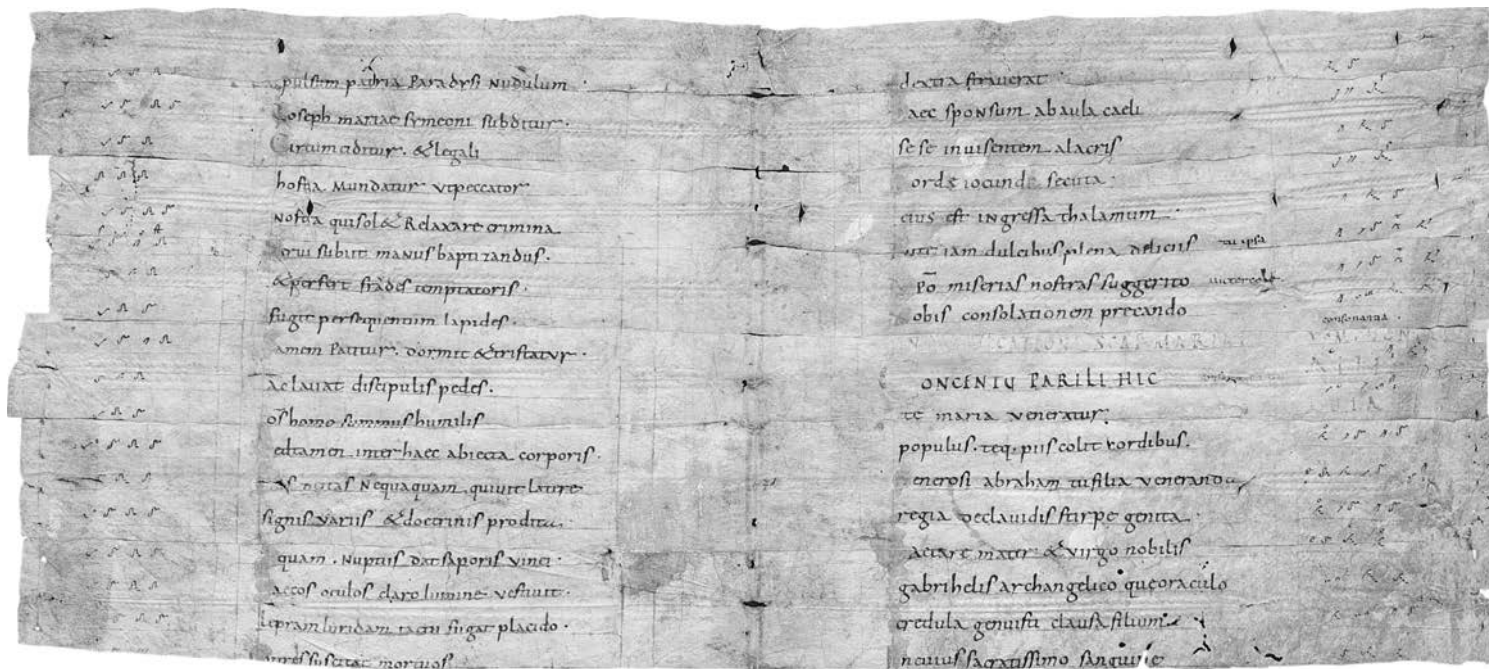
Figure 11 Munich, Bayerische Staatsbibliothek clm 29308/1, fol. 4v–3r.

Table 7 Frankish script in ninth-century East Frankish manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Munich BSB cgm 6943 endleaves & Vienna ÖNB ser. nova 3645	Antiphoner (two folios and four folios)	s.ix ⁴/₄		2918	S Germany
Munich BSB clm 6431	*Officium mortuorum*	s.ix/x		3086	Swabia
Munich BSB clm 29308/1	Notker sequences (six folios)	s.ix/x		3416	S Germany
Munich BSB clm 29316/1	Antiphoner (one folio)	s.ix/x or s.x *in*		3421	prob. Germany
Paris BNF lat. 10587	Notker *Liber Ymnorum* (fragment)	s.ix/x			[St Gallen]
St Gallen SB 359 pp. 5–6, 24–162	Cantatorium	s.ix *ex*		5738	St Gallen
St Gallen SB 390 between pp. 4–5 and 190–1 & St Gallen SB 391 between pp. 4–5	*Versicularium* (three binding strips)	s.ix ⁴/₄			[St Gallen]
St Gallen SB 1397 pp. 13–16	Antiphoner (two folios)	s.ix ¾		5894	SW Germany/ Switzerland
Zurich ZB Rheinau 26 front endleaf	Antiphoner (two folios)	s.ix ¾		7606	
ADDITIONS					
Admont SB 285 fol. 115r	Melismas without text	s.ix ½	nu	10	Salzburg area
Berlin SB theol. lat. fol. 58 fol. 1v	*Versus* (Boethius)	s.ix ½	s.ix *ex*	447	St Omer
Einsiedeln SB 302 p. 73	*Versus Si quantas rapidis*	s.ix 2/3	nu	1128	SW Germany
Frankfurt SUB Barth. 32 fol. 3v	Kyries	s.ix ⅓	?s.ix *ex*	1256	Fulda
Fulda HL Aa 11 fol. 223r–v	Luke genealogy	s.ix ¾	nu	1319	Constance
Mainz BB 1 fols. 47v–48r	Preface	s.ix ⁴/₄	nu	2666	prob. Mainz
Munich BSB clm 4556 pp. 125–6	Marginal entry (with text)	s.ix ½	s.ix or x	2971	prob. S Germany
Munich BSB clm 9543 fol. 199v	Prosula *Psalle modulamina*	s.ix ²/₄	s.ix ²/₄	3108	Regensburg
Munich BSB clm 18765 fols. 16r, 20v, 23v–24r	*Versus* (Boethius)	s.ix *med*	nu	3311	W Germany?
Munich BSB clm 18765 fol. 75r	Pen-trial	s.ix *ex*	s.ix *ex*	3311	W Germany?
Munich BSB clm 19408 fol. 25v	Benedictine Rule Ch 20	s.viii/ix	nu	CLA 1322	Tegernsee
Munich BSB clm 19439 fols. 23v, 26r, 53v, 60v	Pen-trials in a glossary	s.ix ¾	nu	3323	prob. S Germany
Naples BN IV G 68 fols. 5r, 6v, 12v–13r, 14v–15r, 16v–17r, 19r, 24v, 27v, 29v, 33v, 37r, 39r, 41v, 42r–v, 43r, 44r, 69r, 74v, 76v	*Versus* (Boethius)	s.ix ⁴/₄	nu	3574	St Gallen
Naples BN IV G 68 fols. 207r–v, 231v–232r	*Versus*	s.ix *ex* / x *in*	s.ix *ex* / x *in*	3574	St Gallen
Paris SG 1190 fol. 105r–v	Luke genealogy	s.ix ²/₄	nu	5170	Mainz
Paris BNF lat. 10314 fol. 120r	*Versus Hic quoque nihil obstat*	s.ix ²/₄	nu	4629	Lotharingia
Regensburg BZB Fragm. II.3.1 (*olim* Cim. 2)	Gospel reading (St Stephen)	c.800	nu (ill.)	5230	Regensburg
St Gallen KB Vadiana 317 pp. 26–30	Notker sequences	s.ix *med*	s.ix *ex*	5484	St Gallen
St Gallen SB 50 pp. 270, 271, 273	Luke genealogy	s.ix ²/₂	nu	5536	St Gallen
St Gallen SB 136 pp. 11, 116, 149, 212, 261	*Versus* (Prudentius)	s.ix ½	nu	5593	St Gallen
St Gallen SB 196 pp. 76–8, 280	*Versus Tempora florigero, Aspera conditio*	s.ix ¾	nu	5653	St Gallen
St Gallen SB 348 pp. 367–8	Preface	c.800	nu	5736 CLA 937–8	Chur
St Gallen SB 397, p.31	*Exultet*	s.ix ¾	s.ix ¾	5741	St Gallen
St Gallen 844 pp. 129–30	*Versus Vela Neriti*	s.ix ⁴/₄	s.ix *ex*	5852	St Gallen
Stuttgart WLB HB VII 13 fols. 99v–100v	Luke genealogy	s.ix ²/₂	nu	6080	St Amand (then E Francia)
Vatican BAV Pal. lat. 485 fol. 48v	*Exultet* (4 neumes)	860–75	nu	6531	Lorsch
Vienna ÖNB 1815 fols. 19v–20r, 26v, 27v, 28r–v, 34v, 70v–71v, 73r, 74v, 76r, 89r, 92r, 93r, 135r–v	*Pater noster*, Prefaces, Prayers	s.ix ¾	nu	7216	Reichenau
Wolfenbüttel HAB Weiss. 43 fol. 56v	Melisma without text	s.viii/ix	nu	7393	Weissenburg
Wolfenbüttel HAB Weiss. 66 fol. 53v	Sequence *Laudes dicamus*	s.ix ⁴/₄–s.x	s.ix ⁴/₄ –s.x	7411–12	Weissenburg
Würzburg UB M.p.th.f 67 fol. 4v	Gospel reading (7 neumes)	s.viii *ex*	nu	CLA 1422	Brittany?
AFTER 900					
NOTATED BOOKS					
St Gallen SB 18 pp. 21–40	Processional chants	s.x ¼ (B: s.ix ⁴/₄)		5513	St Gallen
St Gallen SB 342 pp. 109–272	Gradual	s.x ¼ (B: s.ix/x)		5735	St Gallen

course of the tenth century.[96] All the Italian examples listed here depend on the East Frankish axes of script, with upward as well as downward movements inclined to the right. Examples of this script can be seen in Figures 12, 20–22, and 33. Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 8.

Although the list of Italian examples is rather shorter than those for the West and East Frankish groups, these Italian examples manifest a difference in the practice of liturgical book-making that is also evident in non-notated Italian books: this is a preference for books combining different layers of the liturgical celebration of the eucharist – prayers, readings and chants – rather than the separate liturgical books (sacramentary, lectionary, gradual) used in the north. There are many extant fragments of plenary missals made in Italy in the ninth century: the notated examples merely add to an already significant number of unnotated examples.[97] The most extensively notated ninth-century Italian example of Frankish script is itself a missal made at Bobbio (Milan D 84 inf.); it is unfortunate that the work of notating this book broke off at the beginning of the sanctorale (fol. 253r). This small group of Italian examples is dominated by examples from Bobbio, including besides the full missal, fragments from three further missals (Heidelberg 3953.1, BAV Vat. lat. 5749 and 5775),[98] and possibly also fragments from a combined antiphoner-gradual (Milan B 48 sup.).[99]

3.6.5.4   Old Hispanic Examples

In the Iberian peninsula some early form of Frankish script was used as a model to develop a highly idiosyncratic version:[100] these Old Hispanic scripts are distinguishable through their use of a whole series of graphic signs that appear nowhere else (and of which the meaning is in many cases unrecoverable).[101] The earliest examples are in a collection of *versus* made at

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[96] On early Italian notations see Baroffio, 'Music Writing Styles in Medieval Italy', and 'Notazione neumatiche (secoli IX–XIII) nell'Italia settentrionale: inventario sommario', *Aevum* 83 (2009), 529–79.

[97] On these missals and missal fragments, see Susan Rankin, 'Carolingian Liturgical Books: Problems of Categorization', *Gazette du livre médiéval* 62 (2017), 21–33.

[98] I regret that I was not able to continue a discussion of these with Leandra Scappatici, begun at the BAV in 2014, due to her untimely death in July 2015.

[99] See Giovanni Varelli, 'The Early Written Transmission of Chant in Northern Italy: The Evidence of Milan, Biblioteca Ambrosiana, B48 sup., ff. 141–142', *EG* 40 (2013), 253–81.

[100] On this script see Michel Huglo, 'La notation wisigothique'.

[101] On this script, see most recently Herminio González Barrionuevo, 'La notación del antifonario de León', in Ismael Fernández de la Cuesta, Rosario Álvarez Martínez and Ana Llorens Martín (eds.), *El canto mozárabe y su entorno. Estudios sobre la música de la liturgia viejo hispánica* (Madrid: Sociedad Española de Musicología, 2013), 95–120. In the context of a research project on the Old Hispanic Office run by Emma Hornby at the University of Bristol, Elsa de Luca is making a study of the taxonomy and vocabulary of melodic and notational signs in León 8.
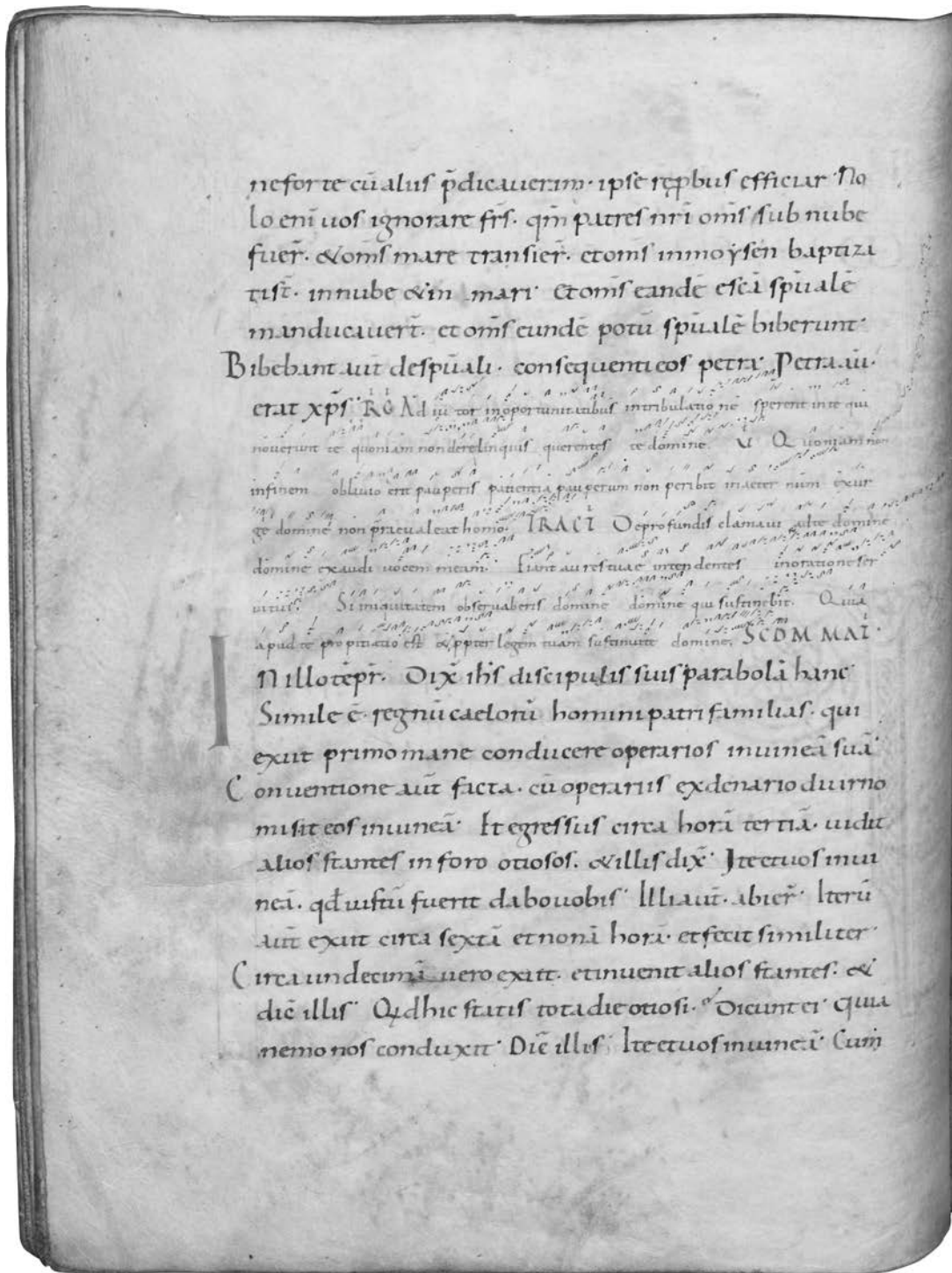
Figure 12 Milan, Biblioteca Ambrosiana ms D 84 inf., fol. 45v © Veneranda Biblioteca Ambrosiana – Milano/De Agostini Picture Library.

Table 8 Frankish script in ninth-century Italian manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Berlin SB (Krakow BJ) theol. lat. qu. 124 fols. II–III	Missal (two bifolios)	s.ix/x or x *in*		472	Italy?
Heidelberg UB 3953.1	Missal (two folios)	s.ix 2/2		1509	N Italy
Milan Ambros. B 48 sup. fols. 142–3	Antiphoner-Gradual (two folios)	s.ix/x		2625	France?
Milan Ambros. D 84 inf.	Missal	s.ix/x		2616	Bobbio
Oxford Bodleian D'Orville 175 fols. 1–50	Missal (palimpsested fragment)	s.ix/x		3793	Italy
Vatican BAV Vat. lat. 5749 fol. 128v	Missal (one folio)	s.ix/x		6908	N Italy [Bobbio]
Vatican BAV Vat. lat. 5775 fol. 156v	Missal (one folio)	s.ix *med*		6926	Italy [Bobbio]
ADDITIONS					
Florence BML Aedil.121 fol. 97v	*Exultet*	s.ix 3/3	s.ix *ex*	1208	N Italy
Modena O.I.4 fol. 154v	*Versus O tu qui seruas*	s.ix *ex*	s.ix *ex*	2793	Modena
Novara BC s.n. single folio	Canon and Proper preface	s.ix 2/2	nu	3636	N Italy
Rome BN Sessor. 38 fol. 56av	Antiphon *Cum autem descendisset*	s.ix 2/4	s.ix–x	5322	?Nonantola
Verona BC LXXXVI (*olim* 81) fol. 15r	Preface	s.ix *in*	nu	7062	Verona

Lyon, copied in Visigothic text script, with neumes written above five *versus*, probably added in the first decades of the ninth century (see Figure 13).[102] In a more substantial ninth-century example, composed of fragments now in Paris (BNF nal. 2199), the ductus of this script is like its immediate northern counterparts, generally perpendicular in the upwards movements and parallel or at a slight angle to this in the downwards movements. One of the most noticeable habits in this script is to make loops, not only in signs as the direction of melodic movement changes but also in signs in which the main direction of movement does not change (as, for example, in a stroke moving perpendicular to the horizontal, with a loop in the middle). There are also signs in which the pen moves from right to left, as if a sign were being written backwards, a feature not found elsewhere.

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[102] See Corbin, *Die Neumen*, 36; I hope to publish a detailed study of these notations shortly.
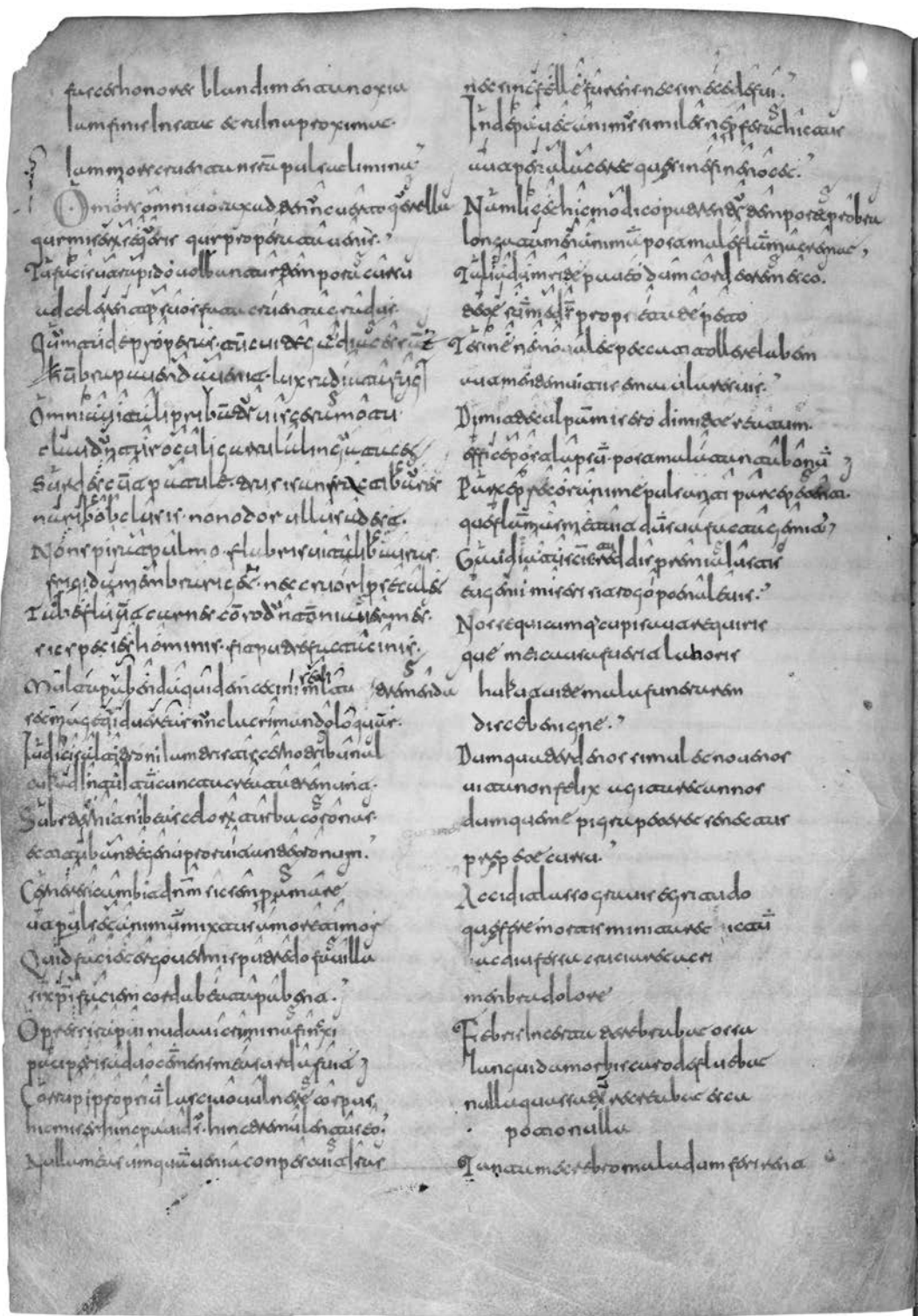
Figure 13 Paris, Bibliothèque nationale de France lat. 8093, fol. 18v.

Table 9 Frankish script in ninth-century Old Hispanic manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Paris BNF nal. 2199 fols. 14–16	Antiphoner (mass and office)	s.ix/x			
ADDITIONS					
Paris BNF lat. 8093 fols. 17r, 18r–v, 24r–v	*Versus*	s.ix ¼	s.ix ½	4529	
AFTER 900					
NOTATED BOOKS					
León Archivio Capitular 8	Antiphoner (mass and office)	s.x ¼			

Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 9.

3.6.6 Nonantolan Script

One further script type to appear among ninth-century examples is unique to one institution, where it must have been devised and developed.[103] The music script written at Nonantola is distinguishable in a number of ways, including the habit of directly attaching musical signs to the vowels in the text line, and of writing musical signs underneath the text line when the melodic direction is towards lower pitches. Extant examples that can be dated in the ninth century, or which may have been written in the ninth century, are listed in Table 10.[104]

3.7 EXPLOITATION OF MUSIC NOTATION BY 900

The range of ways in which music notation was being used by 900 indicates how deeply the writing of musical signs had penetrated literate modes of practice. By this time music

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[103] On this script, see Moderini, *La notazione neumatica di Nonantola*; for a full discussion of its earliest examples, see Giovanni Varelli, *Musical Notation and Liturgical Books in Late Carolingian Nonantola*, unpublished PhD dissertation (University of Cambridge, 2016).

[104] Reproductions of full folios in Rome Biblioteca Nazionale Sessor. 96 are available in *PM* 2, Pl. 11 (fol. 318v) and *Monumenti Vaticani*, ed. Bannister, II, Pl. 54b (fol. 316r).

Table 10 Nonantolan script in ninth-century manuscripts.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
NOTATED BOOKS					
Vatican BAV Pal. lat. 862 fols. 68, 69, 71–2, 74–5, 77, 83, 91, 102	Gradual (palimpsested fragment)	s.ix/x		6564	Italy
AFTER 900					
NOTATED BOOKS					
Rome BN Sessor. 96 fols. 314r–319v	Liturgy for feast of St Benedict	s.x *in*		[5337–9]	

notation was being written in association with many different types of material and in many different ways; and diverse procedures for its interaction with oral practice had been developed. The situations in which music notation can be found include *versus* of many kinds (devotional and secular, metrical and rhythmical), liturgical prayers and readings, the whole range of liturgical chant, from simple psalm tones to the Proper chants of the Gregorian tradition, and types of chant outside the sphere of Roman practice, especially sequences. In what follows below, a brief survey of each of these categories will be made, with the exception of Gregorian Proper chants, which are treated extensively in other parts of the book. Since it is possible to find all these categories of use in the books of one institution – the abbey of Sankt Gallen – my account has been wound around examples from that abbey, although not exclusively restricted to these. I begin with an unusual, indeed, rare, example of the use of music notation, an example that should expand our perceptions of the value of music writing in the early medieval period.

3.7.1 The Sankt Gallen *Versicularium*

At the abbey of Sankt Gallen in the last quarter of the ninth century a collection of psalm verses sung with Introit and Communion antiphons was written out with full music notation. It survives in the form of three strips now incorporated as binding material in the Hartker antiphoner (Sankt Gallen, Stiftsbibliothek 390–1).[105] The text is clearly

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[105] (1) CSG 390, strip between pp. 4 and 5; (2) CSG 390, strip between pp. 190 and 191; (3) CSG 391, strip between pp. 4 and 5. On the content, see Ike de Loos and Kees Pouderoijen, 'Wer ist Hartker? Die Entstehung des Hartkerischen Antiphonars', *BG* 47 (2009), 67–86, n. 9.

Figure 14a Sankt Gallen, Stiftsbibliothek Cod. Sang. 390, binding strip between pp. 4 and 5 (side facing p. 4).
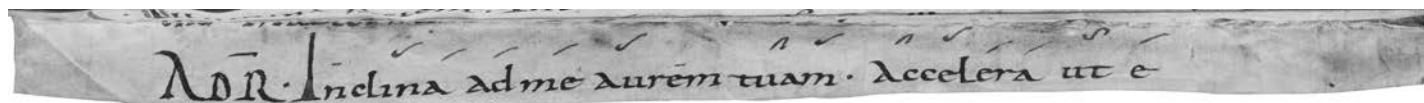
Figure 14b Sankt Gallen, Stiftsbibliothek Cod. Sang. 390, binding strip between pp. 190 and 191 (inner side).

punctuated, with a high dot separating the two parts of each psalm verse. The music notation, written in neumes that convey the number of notes and the direction of their movement on each individual syllable, is simple: signs for single notes, for two notes rising or falling, and for groups of three notes (on one pitch, or on a series of different pitches) make up the main graphic vocabulary. Where necessary these signs are modified to indicate liquescence. Additional information is incorporated in the form of letters set at the ends of the verses: on two occasions 'e', once 'eq' (both for *equaliter*) and once '*iusum*'. These verbal indications advise the reader about the pitch relation between the end of the psalm verse and the beginning of the antiphon that follows – whether it should begin at the same pitch, or at a lower or higher level. For one psalm verse a marginal note – made by the same hand as that which wrote the texts and neumes – advises '*[ue]l mel[odia] ad.uiii*'. This is in relation to the Communion *De fructu operum tuorum*, written out here with the verse *Benedic anima mea domino* and a psalm tone for the third mode. That there was some confusion about modal classification of this Communion melody is evident in later, diastematic, sources: although Aurelian also cites it for the third mode, elsewhere it may be placed in the sixth or eighth modes.[106] Finally, one further characteristic of this *versicularium* notation is worthy of note: unlike the standard chant notation of Sankt Gallen written in this period and familiar from the famous Cantatorium CSG 359, the neumes for these psalm verses are sometimes written at different heights for successive syllables in the space above the text (see Example 3a, b).

The purpose of writing out notation for psalm tones must be to link the parts of relatively simple formulaic melodies ('psalm tones') to the various psalm verses, as they are sung with antiphons for the Introit and Communion. At Sankt Gallen there were eight psalm tones, corresponding to the classification of Introit and Communion antiphons into eight modes; this is also the classification system used by Aurelian in his *Musica disciplina* written in the second half of the ninth century and in the *Commemoratio brevis de tonis et psalmis modulandis* written in the early tenth century.[107] Indeed, the content of Aurelian's treatise – articulated in words – is the textual equivalent of the *versicularium* represented by the Sankt Gallen binding strips,[108] while the *Commemoratio brevis* – using notation – represents an attempt to provide enough information about how the tones should be moulded to the different psalm verses to avert the need to write them all out. In as much as it can be judged by a modern reader, the use of musical signs appears to render the explanation of how a particular psalm verse should be articulated by a formulaic psalm tone rather clearer than when explained in words. When compared to a later manuscript that survives intact and with which the extant material on the binding

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[106] Urbanus Bomm, *Der Wechsel der Modalitätsbestimmung in der Tradition der Messgesänge im IX. bis XIII. Jahrhundert* (Einsiedeln: Benziger, 1929), 60ff and 97ff.

[107] *Aureliani Reomensis Musica disciplina*, ed. Lawrence Gushee, Corpus scriptorum de musica 21 (1975); *Commemoratio brevis de tonis et psalmis modulandis*, ed. Terence Bailey (Ottawa University Press, 1979).

[108] Although Aurelian also deals with graduals, offertories and office responsories.

Example 3a–f Notations for psalm tones in CSG 390, binding strips, and CSG 381.

(a) Be- ne- dic a- ni- ma me-a do- mi- no

CSG 390, between pp. 4 and 5

(b) In-cli- na ad me au- rem tu- am . ac- ce- le- ra ut e- ru- as me .

CSG 390, between pp. 190 and 191

(c) Pa-nem an-ge-lo-rum man- du-ca- uit ho- mo

CSG 390, between pp. 190 and 191

(d) O-pus quod o-pe-ra-tus es in di-e- bus e- o- rum

CSG 381, p. 70

(e) in- cli- na-te au-rem ues-tram in uer- ba o- ris me- i

CSG 381, p. 71

(f) ac- ce- le-ra ut e- ru- as me

CSG 381, p. 70

strips is entirely concordant (CSG 381, pp. 50–141),[109] it is evident that the *versicularium* represented in these three strips would have contained psalm verses for Introits and Communions for the whole liturgical year (*temporale* and *santorale*), including not only

[109] On this manuscript see *Stiftsbibliothek St Gallen Codices 484 & 381*, ed. Wulf Arlt and Susan Rankin, 3 vols. (Winterthur: Amadeus, 1996), I (Commentary).

those for antiphons sung before and after one verse but also those *ad repetendum*, for the repeat of the antiphon on feasts of higher grade. For the communion on Palm Sunday, for example, CSG 381 has thirteen psalm verses (Ps. 18.1, 2, 3, 4, 5, 6, 7, 8, 10, 13, 22, 26, 32).[110] More significantly, the survival of a full *versicularium* made in the first half of the tenth century, and to all intents and purposes identical to the earlier one, allows us to see how the psalm verses were being sung at Sankt Gallen.[111]

Some elements in the musical articulation of psalm verse texts were quite straightforward: the beginning (intonation) in any one mode would always be the same, no matter what pattern of syllable numbers and stresses were offered by a particular verse. After this point, however, much depended on the length of the psalm verse, the position of stress accents and the way in which the end of the verse should be linked to the following antiphon. The next important matter to be secured would be where the verse divides – obvious in many cases, but not always:[112] in the Sankt Gallen *versicularium* this was indicated with a *distinctio* (see Figure 14b). Then, moving towards the end of the half verse, the way in which the tone should reflect the stress accent pattern of any particular verse needed to be determined. From one psalm tone to another the approach varied: in the first psalm tone, as used at Sankt Gallen, this melodic *mediatio* had two such stress accents – as reflected in the notation for '*Inclina ad me aurem tuam*' and '*Panem angelorum manducauit homo*' (Example 3b, 3c). Had the notation for the next psalm verse after *Inclina ad me* survived it would probably have shown (as in CSG 381) how the first of these stress accents moves the first articulation of the recitation forwards, as in '*Opus quod operatus es in diebus eorum*' (Example 3d). Lest one imagine at this stage that all that is required is a good knowledge of syllabic stress in Latin, it must quickly be understood that the behaviour of the eight psalm tones was various: the *mediatio* in the first, third and seventh modes was linked with two stress accents, whereas the *mediatio* in the fifth and eighth modes was linked with one stress accent. The sixth mode used both approaches. Moving beyond the half verse, where the second half was especially long, an extra articulation of the recitation tone was added, as in the fragmentary collection for '*inclinate aurem uestram in uerba oris mei*' (Example 3e). This can be compared to the shorter '*accelera ut eruas me*' (Example 3f). Here what needed to be determined was on which word that articulation would be made: such choices could highlight particular words and thus introduce an element of emphasis.[113] Then the end of the psalm verse could again require decisions about accentuation, but, above all, how to handle the very end, so that the join to the antiphon would be made well.

Already it becomes clear that the singing of the psalm verses in the mass involved the integration of several layers of knowledge – of the Latin language, of melodies and modes, of

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[110] CSG 381, pp. 91–2.
[111] In what follows here I draw extensively on the study and edition made by Michael Hermes OSB of the verse collection in CSG 381: *Das Versicularium des Codex 381 der Stiftsbibliothek St. Gallen. Verse zu den Introitus- und den Communioantiphonen* (St Ottilien: Erzabtei St Ottilien, 2000).
[112] On the problems of division within and between psalm verses see Rankin, 'Singing the Psalter'.
[113] Hermes, *Das Versicularium*, 22ff, with examples of choices made in the CSG 381 collection.

the different conventions of the different modes – and then the ability to be able to combine these elements properly. Since the verses would have been sung by the whole community together, to make a mistake was not to be countenanced:[114] in a very evident way this would upset the harmony of communal worship. Without question, the monastic *opus dei*, singing through the psalter once a week in the offices, would have fixed practices of psalm singing in the minds and memories of monks. But the verses concerned here are sung in the mass, and in their individual forms much less often, in most cases just once a year; in addition, the mass tones were a little more elaborate than those sung in the office. The production of such a *versicularium* as this represents the intention to establish and record in writing a correct version of the whole realm of practice, and, at the same time, a record that could then be consulted should confusion arise. As written visualizations of musical sound that has been fixed and codified, such notations could well be described as 'einer Art zweiter Text *sui generis*'.[115] That the monks of this one abbey thought it useful to make such a collection – unknown from any other institution except the neighbouring abbey of Einsiedeln, but made at Sankt Gallen at least twice – illustrates forcefully the extent to which this community had learnt to exploit music writing. Rather than reading these *versicularium* fragments as a written record for use by incompetent cantors, they might be considered representative of the working out of a set of procedures involving choices, and the desire to use writing to fix the results, as the basis of good liturgical practice. In other words, this is no replacement for daily oral practice, merely a comprehensive support for it.

3.7.2 *Versus*

The notation of melodies for any text composed in verse can also reveal attentiveness to getting a pattern precisely right in different textual situations,[116] as in the Sankt Gallen *versicularium*. Setting down a hymn in honour of SS Medard and Gildard at some point in the last quarter of the century, a West Frankish scribe wrote out four lines of each of six strophes, each fully notated in Lotharingian neumes, even though the hymn melody is repeated for each strophe (see Figure 8).[117] Yet it is not difficult to guess why. First of all, the hymn was set to a well-known melody, more commonly associated with *Aurea luce* in honour of SS Peter and Paul.[118] According to the preceding rubric, the new hymn, *Sublime*

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[114] See Rankin, 'Singing the Psalter', 288.

[115] See Andreas Haug, 'Der Codex und die Stimme in der Karolingerzeit', in *Codex und Geltung*, ed. Felix Heinzer and Hans-Peter Schmit, Wolfenbütteler Mittelalter-Studien 30 (Wiesbaden: Harrassowitz, 2015), 29–45, at 33.

[116] For a helpful introduction see Andreas Haug, 'Neue Ansätze im 9. Jahrhundert', in Hartmut Möller and Rudolf Stephan (eds.), *Die Musik des Mittelalters*, Neues Handbuch der Musikwissenschaft 2 (Laaber 1991), 94–128, esp. 123–6.

[117] See p. 104 above. Berlin SB (now Krakow BJ) lat. qu. 687, fol. 85v.

[118] For this melody see *Die Hymnen*, Monumenta monodica medii aevi 1, ed. Bruno Stäblein (Kassel: Bärenreiter, 1956), melody 152, as found in hymns on pp. 95 (Nevers), 191 (Worcester), 230 (Klosterneuburg), 296 (Einsiedeln), 389 (Verona) and 432 (Gaeta).

Table 11 Versus.

MS	Fol.		Content	SK no	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
Berlin SB theol. lat. fol. 58	1v	Boethius	*Carmina qui quondam* (CP I:1)	1967	s.ix ½	s.ix *ex*	447	St Omer
		"	*Felix nimium* (CP II:5)	5012				
		"	*Eheu quae miseros* (CP III:8)	4322				
Berlin SB theol. lat. fol. 366	1r		*Aeterna christi munera*	411	s.ix ¼	nu	463	Werden
Berlin SB (Krakow BJ) lat. qu. 687	85v		*Sublime festum*	15724	s.ix ¾	s.ix ¼	392	France
Bern BB 66	139v	Eugenius of Toledo	*Sum noctis socia*	15765	s.ix ¾		493	Prob. Auxerre or Fleury
Bern BB 394	1v	Paulinus of Aquileia	*Mecum Timavi*	9514	s.ix/x	s.ix/x –s.x ¼	590	W France
	6v	Prudentius	*Fercula nostra* (*O crucifer bone* LC 3)	10840				
	10r	"	*Pastis uisceribus* (LC 4)	11702				
	12r	"	*Inventor rutili* (LC 5)	8083				
	18v	"	*O nazarene lux* (LC 7)	10956				
	24r	"	*Da puer plectrum* (LC 9)	3393				
	32r	"	*Beate martyr prospera* (LP 5)	1620				
	43r	"	*Bis nouem noster* (LP 4)	1707				
Bern BB 455	10v		*Ihesu redemptor omnium*	7659	s.ix ⅔	s.ix ⅓	599	France (Parisian area?)
	13r–v		*Nocte surgentes*	10283				
	20r		*Sume plectrum*	15780				
	21r		*Qui cupis esse bonus*	13219				
	22r	Eugenius of Toledo	*O mortalis homo* (carm. 2)	10951				
	26r	Boethius	*Heu quam precipiti* (CP I:1)	6247				
	26v	"	*O stelliferi conditor* (CP I:5)	11055				
	27v	"	*Nubibus atris* (CP I:7)	10641				
	29r,	"	*Qui se uolet* (CP III:5)	13381				
	29r–v	"	*Omne hominum* (CP III:5)	11218				
	31v	Prudentius	*Per quinquennia* (*Praef.*)	11856				
	32r–v	"	*O crucifer bone* (LC 3)	10840				

Table 11 (cont.)

MS	Fol.		Content	SK no	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
	33r	Prudentius	*Pastis uisceribus* (LC 4)	11702				
	33v	”	*Inuentor rutili* (LC 5)	8283				
	34v–35r	”	*O nazarene lux* (LC 7)	10956				
	37r	”	*Deus ignee fons* (LC 10)	3548				
	41r	Paulinus of Aquileia	*Ad caeli clara*	152				
Einsiedeln SB 302 p.	73	Boethius	*Si quantas rapidis* (CP II:2)	15143	s.ix 2/3	nu	1128	SW Germany
Leiden BRU Burm. Q.3	20v	Prudentius	*Cultor dei memento* (LC 6)	2976	s.ix ²/₄	nu	2177	St Denis
	21r	”	*O nazarene lux* (LC 7)	10956				
Modena O.I.4	154v		*O tu qui seruas*	11064	s.ix *ex*	s.ix *ex*	2793	Modena
Munich BSB clm 18765	16r	Boethius	*Heu quam precipiti* (CP I:2)	6247	s.ix *med*	nu	3311	W Germany?
	20v	”	*O stelliferi conditor* (CP I:5)	11055				
	23v–24r	”	*Nubibus atris* (CP I:7)	10641				
Naples BN IV G 68	5r	Boethius	*Carmina qui quondam* (CP I:1)	1967	s.ix ⁴/₄	nu	3574	Sankt Gallen
	6v	”	*Heu quam precipiti* (CP I:2)	6247				
	12v–13r	”	*O stelliferi conditor* (CP I:5)	11055				
	14v–15r	”	*Cum Phoebi radiis* (CP I:6)	3078				
	16v–17r	”	*Nubibus atris* (CP I:7)	10641				
	19r	”	*Haec cum superba* (CP II:1)	5847				
	24v	”	*Quisquis uolet* (CP II:4)	13841				
	27v	”	*Felix nimium* (CP II:5)	5012				
	29v	”	*Nouimus quantas* (CP II:6)	10615				
	33v	”	*Quod mundus stabili* (CP II:8)	13921				
	37r	”	*Quantas rerum* (CP III:2)	13077				
	39r	”	*Quamuis fluente* (CP III:3)	13032				
	41v	”	*Qui se uolet* (CP III:5)	13381				
	42r–v	”	*Omne hominum* (CP III:6)	11218				
	43r	”	*Habet hoc uoluptas* (CP III:7)	5744				
	44r	”	*Eheu que miseros* (CP III:8)	4322				
	69r	”	*Si quis arcturi* (CP IV:5)	15161				

Manuscript	folio	author	incipit		date	date		place
	74v	Boethius	*Si uis celsi* (CP IV:6)	15243				
	76v	"	*Bella bis quinis* (CP IV:7)	1636				
Naples BN IV G 68	207r	Theofridus of Corbie	*Ante saecula*	878	s.ix *ex* /	s.ix *ex* / x *in*	3574	Sankt Gallen
	207r		*Gratuletur omnis caro*	5702	x *in*			
	207r		*Alma uera ac praeclara*	598				
	207r	Prudentius	*O triplex honor* (from LP 6)	11062				
	207v		*Caeli ciues adplaudite*	1789				
	207v		*Age iam precor*	458				
	207v		*Adam in saeculo*	236				
	231v	Paulinus of Aquileia	*Tercio in flore*	13638				
	232r		*Ad dominum clamaueram*	167				
Paris BNF lat. 2373	3r		*Anima nimis misera*	805	s.ix ¾	s.ix ²⁄₂	4179	NE France (court?)
Paris BNF lat. 2832	62r	Florus of Lyon	*Iohannis Paulique*	8333	s.ix *med*–	nu	4240	Lyon or St-Oyan
	68v	"	*Hac locuples christi*	5772	¾			
Paris BNF lat. 7680	39r		*Bachifer eia*	1570	s.ix ³⁄₃	s.ix *ex*	4495	E France?
Paris BNF lat. 8051	22v	Statius	*O mihi desertae*	10939	s.ix *med*–	nu	4521	Corbie
	56r	"	*Huc adtolle genas*	7298	¾			
Paris BNF lat. 8087	22r	Prudentius	*O nazarene lux* (LC 7)	10956	s.ix ²⁄₃	nu	4527	Channel coast
Paris BNF lat. 8093	17r	Eugenius of Toledo	*O mortalis homo*	10951	s.ix ¼	s.ix ⁴⁄₄	4529	
	18r	"	*Ve mihi ve misero*	16974				
	18v	"	*O mors omniuorax*	7802				
	24r		*Sume miser*	15774				
	24v	Eugenius of Toledo	*Dura que gignit*	4095				
Paris BNF lat. 8318	57r	Paulinus of Aquileia	*Ad caeli clara*	152	s.ix *med*	nu	4540	W France (Loire)
	64r		*Quem terra pontus aethera*	13173				
Paris BNF lat. 8319	37r	Theodulf	*Gloria laus et honor*	5612	s.ix ²⁄₄	nu	4543	East France
Paris BNF lat. 8670	4r	Martianus Capella	*Anxia cum trepidis* (DN I:21)	921		nu	4554	Corbie
	5v		*Possem minore* (DN I:31)	12188				
	10r		*Ni nostra astrigeri* (DN I:91)	10185	s.ix *med*–			
	11v		*Sed purum astrificis* (DN II:98)	14824	¾			

Table 11 (cont.)

MS	Fol.		Content	SK no	Ms date	Added material date	*Katalog* number	*Katalog* place origin
	14v		*Scande caeli* (DN II:117)	14743				
	109r		*Aurea flammigerum* (DN IX:902)	1432				
Paris BNF lat. 10314	120r	Lucan	*Hic quoque nihil obstat* (IX.528-43)		s.ix ²⁄₄	nu	4629	Lotharingia
Paris BNF lat. 13377	54v	Sedulius	*A solis ortus cardine*	33	s.ix ¼	nu	4905	Corbie?
	55v	Boethius	*Felix nimium* (CP II:5)	5012				
Paris BNF lat. 13745	88v		*Praecelsa Germani*	10308	circa 865	nu	4930	St-Germain-des-Prés
Paris BNF lat. 18554	54v	Sedulius	*A solis ortu cardine*	33	s.ix ²⁄₂	nu	5059	St Denis
Paris BNF nal. 1586	123r		*Vidit lupus capram*		s.viii *ex* + s.ix ½	s.ix *med*	5091a	Tours
St Gallen SB 136 pp.	11	Prudentius	*O crucifer bone* (LC 3)	10840	s.ix ½	nu	5593	Sankt Gallen
	86	”	*Plus solito* (from LP 12)	12088				
	116	”	*Unde pugillares* (from LP 9)	15957				
	149	”	*Quicumque christum* (LC 12)	13433				
	212	”	*Cum moritur christus* (Ap)	4629				
	261	”	*Senex fidelis* (Psy *praef.*)	14889				
St Gallen SB 196 pp.	76–78	Venantius Fortunatus	*Tempora florigero*	16166	s.ix ¾	nu	5653	St Gallen
	280	”	*Aspera conditio*	1112				
St Gallen 844 pp.	129–30	Boethius	*Vela Neriti* (CP IV:3)	17017	s.ix ⁴⁄₄	s.ix *ex*	5852	St Gallen
Vatican Reg. lat. 321	2r	Prudentius	*Per quinquennia* (*Praef.*)	11856	s.ix/x	nu	6662	
	4r	”	*Pastis uisceribus* (LC 4)	11702				
	4v	”	*Inuentor rutili* (LC 5)	8283				
	5r	”	*Ades pater supreme* (LC 6)	255				
	6r	”	*O nazarene lux* (LC 7)	10956				
	7r	”	*Da puer plectrum* (LC 9)	3393				
	9r–10r	”	*Haec stella + O barbarum spectaculum* (*Quicumque christum* LC 12)	13433				
	53v	”	*Germine nobilis* (LP 3)	5589				
	54v	”	*Beate martyr prospera* (LP 5)	1620				
	66r		*Christe qui lux es*	2217				
	66r		*Te lucis ante terminum*	16086				
Vatican Vat. lat. 3363	VIv	Boethius	*O stelliferi conditor* (CP I:5)	11055	s.ix ½	nu	6877	Loire region
	XXVIr		*Omne hominum* (CP II:6)	11218				
Wolfenbüttel, HAB Aug. 8° 56.18	Ir	Prudentius	*Per quinquennia* (*Praef.*)	11856	s.ix *med*	s.ix ²⁄₂ (fol. 8v), and nu	7299	Ferrières
	8v	”	*Pastis uisceribus* (LC 4)	11702				
	10r	”	*Inuentor rutili* (LC 5)	8283				
	16v	”	*Frenentur ergo corporum* (*O nazarene lux* LC 7)	10956				

AFTER 900

Paris BNF lat. 1154			*Versus*		s.ix *ex*/ x *in*	nu	4006	W France (perhaps Limoges)

CP: Boethius, *De Consolatione Philosophiae*
DN: Martianus Capella, *De nuptiis*
LC: Prudentius, *Liber Cathemerinon*
LP: Prudentius, *Liber Peristephanon*
Ap: Prudentius, *Apotheosis*
Psy: Psychomachia
Praef: preface to Prudentius's collected works

festum, was made ('*editus*') by the monk Gifard, and set out here at the request of the monk Lanfred of St Medard (presumably of the abbey at Soissons). Gifard took care to describe the metric-rhythmic scheme followed in the hymn:

> Hymnus de sanctis confessoribus Medardo et Gildardo · editus a gifardo monacho petente lanfredo sancti Medardi monacho · estque metrum iambicum archiloicum constans trimetro acatalecto ·

The layout of the hymn was managed with care: ignoring the original two-column ruling and the left-hand vertical rule, Gifard wrote the hymn out two verse lines at a time, thus fitting the whole into twelve lines of writing (in addition to the opening rubric). The first letter of the first word of each strophe was written as a capital set to the left, so that the second pair of lines of each strophe appears indented at the beginning: the strophic structure was thus rendered visually clear.

Although the opening rubric suggests a metrical behaviour,[119] *Sublime festum* is made as a rhythmic imitation of an iambic trimeter, with the pattern $4 \times (5p + 7pp)$.[120] Most lines follow the same accentual pattern, but there is some variety, especially in the third line. Particularly striking for rhythmical verse is the variation of the pp cadence in strophes 1 ('christicolis', where the accent is unclear, as strictly speaking, according to the rules of Latin prosody, both p and pp syllables should be short)[121] and 2 ('creationem', which has a p accent). Reacting to these textual characteristics, the melodies for each of the four lines of strophes are not identical, with the most significant differences in the second half of line 3. In writing out the melody, the notator was able to convey how to adapt the melody to fit varying accent pattern and syllable count, retaining the association of higher notes with accent and the relation between the first two-note rise and the antepenultimate syllable.

If the various layers of information – the opening rubric, the hymn text, the way it is laid out, and the provision of music notation all the way through – are considered together, we are confronted by an inscription that is about the control of detail within a scheme, or, to say it in another way, how praise could be expressed through the working out of a poetico-musical scheme. One might then understand that Lanfred's request to Gifard was that he achieve all of this clarity – including working out how to measure the melodies correctly in relation to the text – in the writing out of the whole. It has been argued by Sam Barrett – for specific examples of *versus* notation – that the addition of notation could be 'the outcome of an interest in verse structure *per se*'.[122] In this record of *Sublime festum*, interest in the

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[119] The basis of Archilochean metre is iambic trimeter + iambic dimeter.

[120] For this analysis of the hymn and much of what follows, I thank Sam Barrett; 'p' indicates penultimate, and 'pp' antepenultimate.

[121] W. Sidney Allen, *Vox latina. A Guide to the Pronunciation of Classical Latin* (Cambridge University Press, 1965), 83.

[122] Samuel James Barrett, *Notated Verse in Ninth- and Tenth-Century Poetic Collections*, unpublished PhD dissertation, 2 vols. (University of Cambridge, 2000), I, 41.

technical structure of the verse is noted in the rubric, while attentiveness to correct observation of the technical structure is recorded in the music notation, which presents an *exemplum* of how to sing the whole hymn.

Among the many instances of music notation for *versus* made at Sankt Gallen in the second half of the ninth and the early tenth centuries, there is one that exemplifies the detailed working out of a repeated melodic pattern in an interesting and entirely unique way. In a collection of the verse of Venantius Fortunatus made at the abbey, probably in the third quarter of the century, the *versus Tempora florigero* received partial notation: for many lines there are no neumes, but as few as two and as many as seven neumes may be written out, always in groups, for any one line of verse.[123] There is no verse line for which full notation is present. What prompted this unusual sparseness? A convincing solution has been suggested by Elaine Stratton Hild, who demonstrated that this music scribe 'wrote neumes only in places where the coordination of the melody and text varied among strophes'.[124] Since this *versus* was often performed as a processional hymn, beginning with its refrain *Salve festa dies*, it is likely that any reader of the book would not need to be reminded of the melodic model, but would find visual signals about the way in which that melodic model should be coordinated with different strophes useful. The notation then demonstrated the way in which a melodic model should respond to different patterns of dactylic and spondaic feet, but 'once he had notated how to distribute the melody's pitch content to a particular combination of dactyls and spondees', the scribe 'did not write the solution the next time that combination of feet occurred'.[125] Neumes were also added to control the use of liquescence, since this should not be introduced at moments of textual caesura:[126] this was clearly of some importance in the delivery of the *versus*.

In the notations for *Sublime festum* and *Tempora florigero* we can see records that exploit the possibilities offered by music notation to fix a way of singing one particular text. Even if, in not presenting full notations of verse lines, *Tempora florigero* could be named the exception to the rule among song notations, the ways in which the musical signs written above this text relate to verse structure and to the delivery of that verse structure in sound make the case for music notation as a way of recording the detailed working out of a scheme or model even more strongly. And this in itself resonates with a largely unrecorded oral practice, the notation that we see representing a process of stabilizing possibilities more than the simple fact of fixity.

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[123] CSG 196, pp. 76–80, with neumes on pp. 76–8; I note that two signs written over the first line are not neumes but *signes de renvoi*, associated with a marginal gloss.

[124] Elaine Stratton Hild, *Verse, Music, and Notation: Observations on Settings of Poetry in Sankt Gallen's Ninth- and Tenth-Century Manuscripts*, unpublished PhD dissertation (University of Colorado Boulder, 2014), 49.

[125] For a detailed analysis of the relation of these neumes to text structure see Hild, *Verse, Music, and Notation*, 49ff and Appendix 'The notation of *Tempora florigero*'.

[126] *Ibid.*: on principles of the treatment of liquescence, 45, and on liquescence in CSG 196, see 50ff.

Sometimes what was being stabilized through writing was not the full detailed working out of a scheme, but simply the fact of a how singing a particular *versus* might be approached. For it is more common to find notation of a group of opening lines for forms of verse – hymns, *metra*, other songs – than of the whole. In the case of a good many *versus*, this was intended to set a model for the whole piece, as, for example, in the neumes added to the first three, four or five lines of *metra* in a copy of Martianus Capella's *De nuptiis* made at Corbie in the middle to the third quarter of the ninth century (BNF lat. 8670),[127] or many of the notations in a songbook made in the Paris region in the middle of the century, and taken to Laon, probably by 900 (Bern 455).[128] Often it is possible to link the particular amount of verse notated with aspects of structure directly: in the collection of *versus* in a manuscript associated with Lyon and written in a Visigothic script (BNF lat. 8093), the first two of fourteen hexameters of Eugenius of Toledo's *O mortalis homo* were notated (fol. 17r). These hexameters are regularly articulated by a penthemimeral caesura, and have a regular sentence structure, each *sententia* extending over two verse lines, and each line of verse comprising a separate clause.[129] The notation of a pair of hexameters was considered sufficient here. For the planctus *Anima nimis misera* in BNF lat. 2373 (fol. 3r) it was thought necessary to write out notation not for one but for two strophes; although the melodic profiles for each of these strophes are virtually identical,[130] the notator was clearly aware of two ways of ending a strophe – with '*Lugenda nimis, quia aeternis es / torquenda cruciatibus*' at the end of each odd-numbered strophe, and '*Succurre, Christe, quia benignus es / et da misericordiam*' at the end of each even-numbered strophe. The scribe notated a basic unit of two strophes.

There are several instances of this kind of practice among the Sankt Gallen notations, including those for the *metra O crucifer bone, Quicumque fidelis* and *Senex fidelis* in CSG 136, a collection of the works of Prudentius made in the mid-ninth century.[131] *O crucifer bone* and *Senex fidelis* each received notation for the first five lines, while the first music scribe to handle *Quicumque christum* notated just the third strophe.[132] Peculiar as this may seem, there was a good reason, for this was the first strophe in which 'the beginning of the melody would have accompanied a regular instance of the verse type'.[133] Among the many examples of *versus* with notation written in the late ninth or early tenth centuries, the most extreme example of incomplete written records is to be found in another manuscript made and used at Sankt Gallen, in the form of a small collection of *versus* added at the back of a copy of

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[127] David Ganz, *Corbie in the Carolingian Renaissance*, Beihefte der Francia 20 (Sigmaringen: Jan Thorbecke, 1990), 152.

[128] On the notations in this manuscript see esp. Barrett, 'Neumes in a Ninth-Century Verse Collection'.

[129] Barrett, *Notated Verse*, I, 141–2.

[130] *Corpus rhythmorum musicum saec. IV–IX*, I: *Songs in Non-Liturgical Sources*, ed. Francesco Stella and Sam Barrett (Florence: Sismel, 2007), 77–88, at 88.

[131] CSG 136, pp. 11, 149, 261. On these and other notations in this manuscript see Hild, *Verse, Music, and Notation*, 233ff.

[132] Notation for the first strophe was probably written in the eleventh century or later.

[133] Hild, *Verse, Music, and Notation*, 239–40.

Boethius's *De consolatione philosophiae* and *De institutione arithmetica*, as well as other late antique works that were used in Carolingian schools.[134] The codex was made at Sankt Gallen in the last quarter of the century, and much of the supplementary material added around 900. The songs are on fols. 207r–v and 231v–232v, copied in two groups by four scribes (Figure 15).[135] These *versus* were added in the context of a book that already held the *metra* of the *De consolatione philosophiae* with extensive notation,[136] as well as two passages on metre, by Lupus (*De metris*, fols. 2r–4v) and Strabo (*De figuris metrorum*, fols. 103v–106r).[137]

For eight *versus* copied on fol. 207r–v, a first scribe wrote out just one strophe for six, and two strophes for the other two; then a second, much less competent scribe wrote out one strophe of *Perge frater qui adheres*. On fol. 231v, following a passage from Martianus's *De nuptiis*, a third scribe wrote out two strophes of *Tercio in flore*. On fol. 232r, continuing from the facing page (fol. 231v) below *Tercio in flore*, another scribe wrote out all the seventeen strophes of the hymn *Ad dominum clamaueram*. Notation was provided for much of this material, for seven of the nine *versus* on fol. 207, for *Tercio in flore* on fol. 231v, and for the first two strophes of *Ad dominum clamaueram* on fol. 232r. Why write out so little text – only the first strophe, comprising three lines, of the 14-strophe *Gratuletur omnis caro*,[138] or the first strophe, comprising four lines of Prosper of Aquitaine's *Age iam precor*, or the first two strophes, each of five lines, of the 25-strophe *Ante secula*?[139] What was the nature of the limitations faced by these scribes? In view of the very distinctive notations written on these pages, I would suggest that the lens through which we might observe these additions is not so much limitations as possibilities.

As notations written at Sankt Gallen, these are quite distinct, so distinct that it has to be suspected that the only other example of such music writing found in books from this abbey might have been written by one of the two scribes involved in notating the supplement in the Naples manuscript.[140] The distinguishing features of these notations are several: the use of an unusually high number of *litterae significativae*; the use of a wide range of ways of writing a sign for two descending notes; the angle at which a sign is written to indicate (or reinforce) direction; and the way in which the space above the text is used to place individual signs. *Litterae significativae* were written in as individual letters (such as 'l' for *leuare*), or groups of letters

[134] Naples IV G 68. On this selection of texts for teaching, see Günter Glauche, *Schullektüre im Mittelalter: Entstehung und Wandlungen des Lektürekanons bis 1200 nach der Quellen dargestellt*, Münchener Beiträge zur Mediävistik und Renaissance-Forschung 5 (Munich: Arbeo, 1970), 59ff.

[135] These are listed in Ewald Jammers, 'Rhythmen und Hymnen in einer St. Galler Handschrift des 9. Jahrhunderts', in Martin Ruhnke (ed.), *Festschrift Bruno Stäblein zum 70. Geburtstag* (Kassel: Bärenreiter, 1967), 134–42.

[136] On the notations for individual *metra*, see Sam Barrett, *The Melodic Tradition of Boethius'* De consolatio philosophiae *in the Middle Ages*, Monumenta monodica medii aevi subsidia 7, 2 vols. (Kassel: Bärenreiter, 2013), II, 14–37.

[137] For full lists of the contents of the manuscript see Claudio Leonardi, 'I codici di Marziano Capella*', *Aevum* 34 (1960), 1–99, 411–524, no. 131 (pp. 412–14), and *Corpus Rhythmorum*, ed. Stella and Barrett, xciii–xciv.

[138] See *Corpus Rhythmorum*, ed. Stella and Barrett, 251–65.

[139] *Ibid.*, 89–104.

[140] See further below, p. 142.
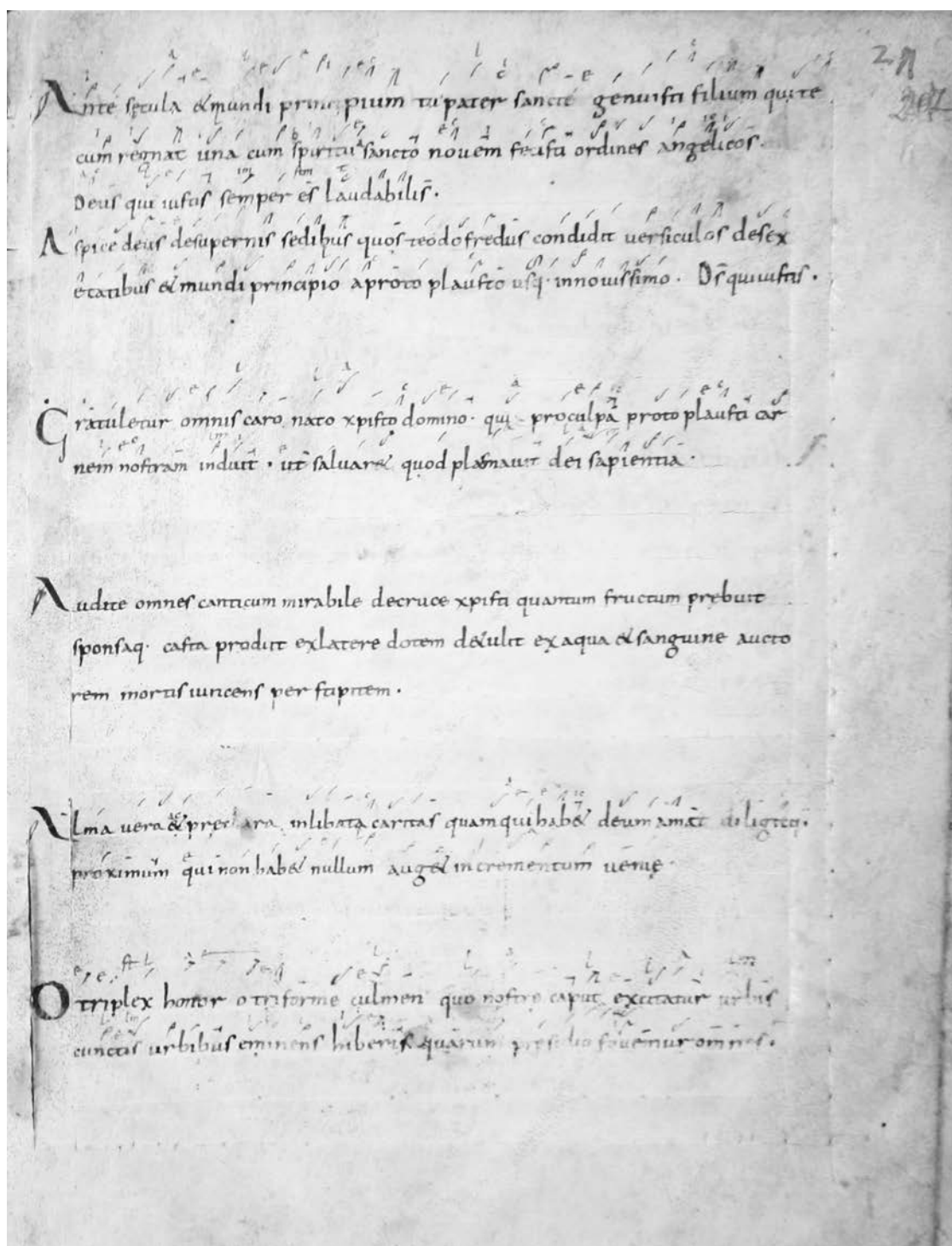
Figure 15 Naples, Biblioteca Nazionale ms IV.G.68, fol. 207r.

Example 4 Notation for the opening of *Gratuletur omnis caro*.

Gra- tu- le- tur   om-nis ca-ro

(such as 'im' for *iusus mediocriter*) to clarify momentary issues of melodic direction, intervallic size and speed; letters written onto these pages are dominated by the first two categories, although 'c' (*celeriter*) and 't' (*trahere*) do appear. The sign for two descending notes, usually written at Sankt Gallen as a narrow arch, is written in these notations sometimes with the left- and right-hand side of that arch rendered of equal length, but sometimes with a longer left-hand side, and sometimes with a longer right-hand side; written with a longer right-hand side, this is recognized in other Sankt Gallen notations as a kind of *nota bene* sign indicating a larger descent (than one tone) or descent to a low point. In addition, another sign, otherwise quite untypical of the Sankt Gallen sign repertory, is used to indicate descent: a 'square' form comprising a horizontal stroke turned at a right angle and pulled down was written in Lotharingian script, but rarely in Frankish scripts. Here it may have been used for some special (now lost and unrecoverable) effect. The angling of a sign to reinforce direction can be seen twice in the notation for *Adam in seculo* on fol. 207v ('*nasci*', '*figurat*'): here a short stroke usually written horizontally is angled downwards, with the letter i (*iusus*) written beside.

Finally the placement of the musical signs is visually striking: these are moved up and down in the space available, most prominently in those situations where there was no impediment in the form of a line of text immediately above (e.g., on fol. 207r, ll. 1, 6, 13). For the three words *Gratuletur omnis caro*, for which a clearly concordant version on lines can be traced (see Figure 15 and Example 4), the only point at which a pitch rise or fall is *not* notated in one way or another is between the third and fourth syllables of '*Gratuletur*', where there must have been a step up of a tone (if the later pitched version is accepted as a close model for the Sankt Gallen notation).[141] The extent to which this movement of signs up and down the page was a deliberate exploitation of a possibility, but rather unorthodox at Sankt Gallen, can be judged by a comparison with the notation of the Cantatorium CSG 359. In Figure 16, the first strophe of the Easter hymn *Pange lingua* as written out in the Cantatorium is shown beside a version on lines (Example 5).[142] Although the scribe of the

[141] The pitched version is based on the melody in Bamberg, Staatliche Bibliothek, Varia 1 fol. 63r; see *Corpus Rhythmorum*, ed. Stella and Barrett, 263.

[142] The version on lines is based on the 140 or so versions transcribed by Bruno Stäblein, in preparation for *Die Hymnen* (melody 1007); his transcriptions are in the Stäblein Archiv at the University of Würzburg. For certain passages, above all *crucis tropheo* and *redemptor orbis*, it is not possible to be secure about exact pitches, only melodic direction; for the whole of the first written line (up to *proelium*) the pitched version can be considered fairly reliable.
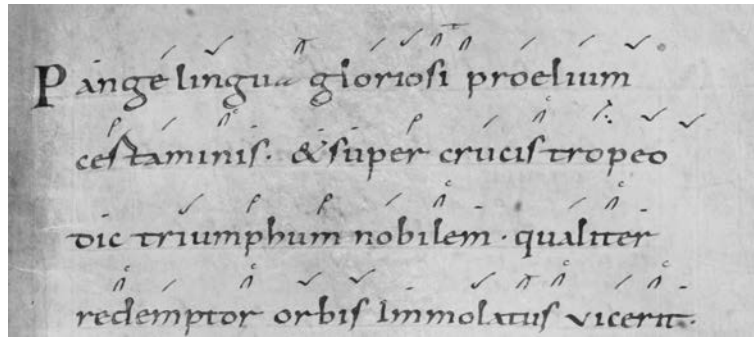
Figure 16 Sankt Gallen, Stiftsbibliothek Cod. Sang. 359, p. 101 ll.1–4.

Example 5 The processional hymn *Pange lingua*, following the layout in CSG 359, p. 101.

Pan- ge lin- gua glo-ri- o- si proe-li- um

cer- ta- mi- nis . et su- per cru-cis tro- pe- o

dic tri- um- phum no- bi- lem . qua- li- ter

re- demp- tor or- bis im- mo- la- tus vi-ce- rit .

Cantatorium moved successive neumes up and down, the degree to which he did this was very limited – as for the two neumes over '*gloriosi*' in the first line, matching a rise of a third; more often changes of pitch from one neume to the next were not marked by any vertical

movement of the neumes – as for '*triumphum*' in the third line, where two liquescent signs sit at the same level, while the pitches they match are shown a fourth apart in the version on lines. Compared to this, the first line of the first *versus* on fol. 207r of the Naples manuscript is striking: for the first two words, *Ante saecula*, three distinct vertical levels are marked by the neumes. Further on in this first written line, a series of strokes over '*genuisti*' again marks three distinct levels. It is not so much the fact of the movement of signs up and down in itself that matters here, since that can also be remarked in the Cantatorium,[143] but the *sustained* use of that technique in these *versus* notations. The capacity of the script type written at Sankt Gallen to indicate melodic direction and interval was usually suppressed, subordinated to other demands made of pages made with music notation. But the potential of that script to achieve more clarity about transient melodic detail was instead stretched to its limits in the notations of the Naples Boethius manuscript.

The planned limitation of the amount of text copied can thus be seen in combination with a marked attention to techniques of pitch clarification in the notations on the pages of the Naples manuscript: together these suggest that the primary concern of its scribes was to get musical information recorded in writing, and that the full texts of these *versus* must have been preserved elsewhere, in other codices.[144] The preoccupation with notational detail underlines the likelihood that these melodies were not so anchored in the oral tradition of the Abbey at the time of their writing as other music repertories such as the Roman-Frankish chant: these melodies may indeed have come to the knowledge of their scribes through a visitor, or through the visit of a Sankt Gallen monk somewhere else. The notations certainly imply a different kind of relation between memory and writing to those of, on the one hand, the *versicularium* represented in binding strips and, on the other, the Cantatorium. Whatever the standing of these notations in the Sankt Gallen situation at the end of the ninth century, the preservation of these melodies in the evidently pedagogical context of this manuscript is entirely consistent with the nature of their musical expression of verse. For it can be demonstrated that these melodies are made in ways that highlight the technical structures of their verses, using melodic repetition (or its absence), elongation and breaking of the line to articulate the organization of those structures. The setting of *Age iam precor* articulates 'the definitive aspects of the text's Anacreontic verse structure', creating 'an audible manifestation of the verse type' and giving this 'precedence over the conveyance of the text's syntax'.[145] The very similar settings of the *versus Gratuletur omnis caro* and *Alma uera et preclara* both convey the rhythmic structure *trochaic septenarius* in two ways, as

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[143] See Rankin, 'On the Treatment of Pitch', 158–61.

[144] As they evidently were: the first four of these *versus* appear in a manuscript copied at Sankt Gallen circa 800 (now Leiden BRU Voss. lat. Q. 69); see Dieter Schaller, 'Frühmittelalterliche lateinische Dichtung in einer ehemals St. Galler Handschrift', *Zeitschrift für deutsches Altertum und deutsche Literatur* 93 (1964), 272–91, at 289.

[145] Hild, *Verse, Music, and Notation*, 220–2.

'versiculi alterni' (8 + 7) and 'versus quadratus' (4 + 4 + 4 + 3),[146] while the setting of *Adam in saeculo* 'systematically articulates the endings of the poem's half-lines and lines'.[147] The Sankt Gallen teachers were using melodies that were shaped in such a way as to render verse structure in sound, and music notation offered to them a means to 'archive' those didactic resources.[148]

The notational techniques displayed in the *versus* supplement at the back of the Naples manuscript were no mere flash in the pan: notations for two of the *De consolatione philosophiae metra* earlier in the book (*Quamuis fluente*, fol. 39r; *Si quis arcturi*, fol. 69r) also have a high number of *litterae significativae*, some angled neumes and a dynamic use of the interlinear space.[149] In addition, one of the scribes writing notation at the back of the Naples manuscript may also have been the notator of another *versus* in the Fortunatus collection in CSG 196.[150] Here the notation for *Aspera conditio* (p. 280) also moves the neumes up and down and uses many significative letters.[151] Of course, it is clear from their contents that both these manuscripts were in use at Sankt Gallen in the period circa 900, but their association is reinforced by the presence of an unusual form of gathering signature with a number set between four decorative curved marks in the Naples manu-script from gathering 13 (marked on fol. 100v, the gathering beginning at fol. 93) to the end, and in CSG 196 throughout the manuscript. In both manuscripts these signatures are written in a dark red ink, and there is no reason not to consider them to be contemporary with the manufacture of the manuscripts. The presence of this kind of notation in these different situations indicates that its presence in a Sankt Gallen context was more than transient, and represented a settled procedure for the writing out of *versus* melody at the Abbey.

The use of music notation in a didactic situation might also explain the variety of notations present in the northern French collection of *versus* in Bern 455. Among the notations written in the late ninth and early tenth century for eighteen *versus*,[152] three distinct script types are used (Palaeofrankish, West Frankish and Lotharingian); the grades of script range from not well written and without nuance to calligraphically stylized and with plenty of nuance; finally, there is considerable variation in the amount of text notated (from

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[146] *Ibid.*, 224–9.

[147] *Ibid.*, 229.

[148] Barrett, *Notated Verse*, 110.

[149] See Barrett, *The Melodic Tradition*, II, 30–1, 35–6.

[150] On this notational entry see Hild, *Verse, Music, and Notation*, 249–51.

[151] The techniques used in the notations of the Naples manuscript and for *Aspera condicio* in CSG 196 are so distinct that it is difficult not to see all these notations as written by one scribe; yet these three passages of notation may have been written by three scribes, using the notational system familiar to them in the same distinct fashion. Unfortunately there is simply not enough material within the notations themselves, or beyond these to use for comparison, and thus to resolve this issue clearly.

[152] For a complete list, with details of script type, see Barrett, 'Neumes in a Ninth-Century Verse Collection', 164: I leave out of this discussion three clearly tenth-century additions (on fols. 25r, 43r–44r, 44r–v).

eight syllables to a full *versus*). Movement of the book from its first home, somewhere in the Parisian region, to Laon, where it was certainly in the hands of Adelelm, successively a master in the school, cathedral dean and treasurer, and finally bishop (921–30), would explain some of the difference of scripts: Barrett has argued that the different music scripts belong to different layers in the history of the book, the Palaeofrankish scripts representing the earliest layer of additions, followed by the West Frankish and then the Lotharingian scripts, themselves typical of Laon practice.[153] But it is the grades of script that are most telling about who made these notations. For the first music entry in the book (fol. 10v), *Ihesu redemptor*, the scribe may not have been conversant with a full repertory of signs; in any case, he wrote only simple signs, and these lack nuance such as liquescence or changing heights. This, as well as other examples in the book (and those on fol. 31v for *Per quinquennia* where it is not clear that the scribe is at all conversant with regulated forms of music script), might be described as written in a '*scrittura di base*', a 'foundational or elementary script'.[154] Then there are other examples that are perfectly competent, even if not graphically very controlled: those for *Omne hominum* (fol. 29r–v) and *Pastis uisceribus* (fol. 33r) could be described in this way. Finally, there are notations for two *versus* that show good graphic control as well as knowledge of ways of deploying the script and incorporating nuance: these are for *O mortalis homo* (22r) and *Qui se uolet* (fol. 29r). That both are probably by Adelelm himself can be argued on the grounds of the association of the neumation of *O mortalis homo* with a textual correction in Adelelm's hand.[155] These different grades of script correlate directly with the amount of text notated, from, at one end of the spectrum, the unfortunate notator of *Nocte surgentes* (fol. 13r) who did not advance beyond eight syllables of the text, to the other end, in the work of Adelelm, who notated both *versus* for which he was responsible in full. Between these extremes, the notators generally worked through one strophe, or at least one unit of the text, although there is one example of a notator who worked sporadically, notating passages but never full lines (after the first two): unfortunately his notation for *Auis haec magna* (fol. 13v) was not as consistent in picking up changing micro elements of a macro pattern in the same way as the notation for *Tempora florigero* in CSG 196. These grades and different amounts of notation point to different levels of ability, and hence to the possibility that we see in this book the work of a master and his young pupils. If this were the case, then the notations may represent records of exercises in the invention of musical realizations for selected *versus*,[156] yet another way of using writing in the daily life of an institution in the late Carolingian period.

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[153] Barrett, 'Neumes in a Ninth-Century Verse Collection', 185.

[154] See Petrucci, 'Libro, scrittura e scuola' (and the translation by Radding, 'Book, Handwriting and School', p. 61).

[155] On this identification, see Sam Barrett, 'Glimpses of Carolingian Latin Song: A Laon Verse Collection Reconsidered', in Graeme M. Boone (ed.), *Music in the Carolingian World: Witnesses to a Metadiscipline* (Columbus: Ohio State University Press, in press).

[156] Barrett, *Notated Verse*, 110.

One final aspect of the notation of *versus* turns our perspective back from learning about verse and the archiving of ways of doing that to the delivery of verse. In the examples of psalm verse recorded in the binding strips of CSG 390/391, and then in numerous examples of *versus* recorded in both Western and Eastern Frankish manuscripts, it was possible to see how music notation could be used to exemplify a basic musical scheme, its application to all the various expressions of that scheme in a complete *versus* and its transfer from one *versus* to another.[157] The more complete and the more detailed the notation, the closer it would bring the reader to a precise sense of how the *versus* could be delivered. That same concern with how a *versus* might be delivered is often reflected in the way in which text is laid out, when the use of a refrain may be extremely clarified. Such an example is the Boethian *metrum Felix nimium* as copied into a Corbie collection of texts 'suited to grammatical teaching' (BNF lat. 13377, fol. 55v).[158] Here the *metrum* is written out with the first line repeated after every subsequent couplet,[159] and again before every couplet, with capitals and punctuation as follows:

> Felix nimium prior aetas
> contenta fidelibus arvis.
> nec inerti perdita luxu
> felix nimium prior aetas
> Felix nimium prior aetas
> facilique sera solebat.
> ieiunia solvere grande.
> felix nimium prior aetas.
> Felix nimium prior aetas
> non bachica munera norant.
> liquido confundere melle.
> felix nimium prior aetas (and so on)

It is entirely possible that the *metrum Felix nimium* could have been sung in this form, with refrains, without the written record actually needing to reflect that level of performance detail;[160] yet the attentiveness with which the form of the song has been set out in the Corbie book provides a good analogy to the care with which music notation was often added (including in this manuscript for this song). Such examples as these show the written record being used as more than a basic memory trigger: reading these notations the reader can see how some sort of model brought to mind by the stimulation of visual signs could be carefully shaped in specific situations.

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[157] On such models see Barrett, *The Melodic Tradition* I, 133–4.

[158] Barrett, *The Melodic Tradition* II, 133.

[159] On this and other examples of refrain forms see Barrett, *The Melodic Tradition*, I, 143ff.

[160] For a consideration of the changing practice in ways of singing *Felix nimium* see Barrett, *The Melodic Tradition* I, 144–8.

3.7.3 Prayers and Readings

Although the general description 'working out a pattern' provides as useful a general summary of the notations written out in books of prayers and of readings as for *versus*, it is the difference between notations for these categories that is especially informative about the ways in which notation was being made use of, and the ways in which oral and written practices could interact (Table 12).

Notations for prayers and readings are much more likely to have been used as guides at the moment of delivery than the kind of document represented by the Sankt Gallen *versicularium*: it is expected that a priest acting as celebrant would read directly from a sacramentary and a reader directly from a gospel book. In this sense neumes added above texts could act as an immediate guide to the reader, whether instead of (or in addition to) any archival intention.

In notations written out for priests and readers, the information provided very often consisted of short cues only – set towards the beginning or the end of phrases. Although this kind of notation is by a long way the hardest to date, it is possible that some of the notation for the *Pater noster* in a Reichenau sacramentary made in the third quarter of the ninth century (Vienna 1815) was added before the end of the century.[161] The concerns of this notator seem to have been how to begin phrases, and warning the reader about liquescent passages ('*regnum*', '*uoluntas*'). In those pitched notations for the *Pater noster* to which these neumes clearly relate, only four pitches are used: when notated on lines these cover a fourth, consisting of two steps of a tone, and one semitone at the top (**G a b c**). Thus, at the opening, the reader is directed to sing starting from the high **b**, falling to **a**, whereas at the beginning of the phrase '*adueniat*', the reader is to rise from **b** on the second, stressed, syllable (see Example 6). The key to why such simple information about phrase beginnings was written out is that there were probably (as notated in later manuscripts) two ways of singing this prayer: one for normal days ('*in solemnitatibus*') and the other '*in festiuitatibus*'.[162] In the simpler way of singing the prayer, the phrases beginning *Pater noster, Panem nostrum* and *Et dimitte nobis* all began with a rise through two tones (**G** to **a**, **a** to **b**), whereas the festive manner of singing notated in the Reichenau sacramentary has falling movement at the beginnings of these three phrases. It appears that the notator marked those passages where the festive way of singing differed from the daily delivery of the *Pater noster*. The implication of notations in later books is that the ends of phrases were treated the same way on normal days and on festal days, and this would explain why no neumes were entered in the Reichenau sacramentary for those passages. In this sacramentary music notation was being used as a kind of warning not to sing

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[161] On fol. 19v. The notation here and on fol. 20r includes several *litterae significativae*, written in forms entirely consistent with the main text hand of the book, suggesting a contemporary date; this notation is not by the same hand which notated cues in prefaces throughout the book.

[162] As recorded by Bruno Stäblein for two southern Italian manuscripts, Montecassino Archivio dell'Abbazia 339 and Benevento Biblioteca capitolare VI.29: see 'Pater noster', in *MGG* 1, X, 943–50.

Table 12 Readings and prayers.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
READINGS					
Autun BM S3(4) fols. 25r–v, 78r, 198r–v	Matthew genealogy; *Ideo ecce ego mitto ad uos* (St Stephen); *In principio erat uerbum*	s.viii	nu	CLA 717	Flavigny?
Fulda HL Aa 11 fol. 223r–v	Luke genealogy	s.ix ¾	nu	1319	Constance
Munich BSB cim 19408 fol. 25v	Benedictue Rule ch. 20	s. viii/ix	nu	CLA 1322	Tegernsee
New York Public Library 115 fol. 48r–v	*'Heli heli lamazabdani . . .'* (Matt. 27.46)	s.ix ³⁄₃	s.ix ³⁄₃	3625	Landévennec
Paris BNF lat. 250 fols. 13v–14r	*Ideo ecce mitto ad uos* (St Stephen)	830-40	nu	3970	Tours
Paris BNF lat. 260 fols. 74r, 79v [not 107r]	Short passages: Matt. 27.62, Luke 3.22	s. viii/ix	nu	3974	Tours
Paris BNF lat. 261 fols. 19v–20r	Matthew genealogy	s.ix ¾	nu	3975	W France
Paris BNF lat. 270 fol. 70v	*Luke genealogy	s.ix ¾	nu	3984	N France
Paris BNF lat. 894 fol. 29v	Matthew genealogy	s.ix ²⁄₄	nu	3997	N France?
Paris BNF lat. 5325 fols. 137r–142r	Cues in a homily	s.ix ²⁄₄	nu	4362	Tours
Paris SG 17 fols. 4r–5r	Matthew genealogy	s.ix ³⁄₃	nu	5162	Brittany
Paris SG 1190 fol. 105r–v	Luke genealogy	s.ix ²⁄₄	nu	5170	Mainz
Regensburg BZB Fragm. II.3.1 (*olim* Cim. 2)	Includes *Ideo ecce ego mitto ad uos* (St Stephen)	c.800	nu (ill.)	5230	Regensburg
St Gallen SB 50 pp. 270, 271, 273	Luke genealogy	s.ix ²⁄₂	nu	5536	St Gallen
Stuttgart WLB HB VII 13 fols. 99v–100v	Luke genealogy	s.ix ²⁄₂	nu	6080	St Amand (then E Francia)
Würzburg UB M.p.th.f 67 fol. 4v	*Cum ergo natus esset* (Matt. 2.1) (7 neumes)	s.viii *ex*	nu	CLA 1422	Brittany?
PRAYERS					
Florence BML Aedil.121 fol. 97v	*Exultet*	s.ix ³⁄₃	s.ix *ex*	1208	N Italy
London BL Add. 16605 fols. 1v–3r	*Exultet*	s.ix ¾	nu	2367	Stavelot

Table 12 (cont.)

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
Mainz BB 1 fols. 47v–48r	Preface	s.ix ⁴⁄₄	nu	2666	prob. Mainz
Paris Arsenal 227 fols. 202r–204r	*Exultet* (prologue and preface)	s.ix ⁴⁄₄	s.ix/s.x	3915	Central France or Parisian region?
St Gallen SB 348 pp. 367–8	Preface (Hadrianum model preface)	c.800	nu	5736 CLA 937–8	Chur
St Gallen SB 397 p.31	*Exultet* preface	s.ix ¾	s.ix ¾	5741	St Gallen
Tours BM 184 (2nd sacramentary) fols. 7r, 11r, 12r–v, 13v, 51v, 52v–53r, 64v, 82r	Prefaces, *Exultet* prayer, chant cues	s.ix ⁴⁄₄	nu	4584	[Tours]
Vatican Ott. lat. 313 fols. 112–14	*Exultet* preface	s.ix ²⁄₂	nu	6438	St-Germain-des-Prés
Vatican BAV Pal. lat. 485 fol. 48v	*Exultet* (4 neumes)	860–75	nu	6531	Lorsch
Verona BC LXXXVI (*olim* 81) fol. 15r	Preface	s.ix *in*	nu	7062	Verona
Vienna ÖNB 1815 fols. 19v–20r, 26v, 27v, 28r–v, 34v, 70v–71v, 73r, 74v, 76r, 89r, 92r, 93r, 135r–v	*Pater noster*, Prefaces, Prayers	s.ix ¾	nu	7216	Reichenau

the prayer in the most familiar way, as it was sung every day. In relation to questions of how orality and literacy interact, this is an especially interesting example: the notator saw fit to notate only those passages that differed between two ways of singing the prayer, thus implying a perfectly secure oral transmission of the rest, and took advantage of the writing techniques provided by musical signs to show the reader how to sing the prayer in a less usual way.

Even simpler musical cues are found added to a homily for St Martin in a Tours *Martinellus* collection (BNF lat. 5325 fols. 137r–142r): using just the simple point (*punctum*) and upwards stroke (*uirga*) this notation indicated to the reader how the stress pattern of the text should be musically modulated at the ends of phrases: '*ubique conuerterent*' (fol. 137r), '*militari terreno*' (fol. 137v), '*uixerat annis*' (fol. 139r). But such simple cases, whether for prayers or for readings, are relatively rare: more often notation was added in those situations that demanded unusual treatment, such as the *Exultet* or specific readings for the highest feasts, which could have their own special melodic tones. This was commonly the case for the genealogies of Matthew

Example 6 Neumes over *Pater noster* in Vienna, Österreichische Nationalbibliothek lat. 1815, fol. 19v.

Pa-ter nos-ter qui es in cae-lis sanctificetur nomen tuum .

Ad-ue-ni-at reg-num tu-um .

Fi-at uo-lun-tas tu-a si-cut in cae-lo et in ter-ra .

Pa-nem nos-trum co- ti-di-a-num da no-bis ho-di-e .

Et di- mit-te no-bis de-bi-ta nos-tra .
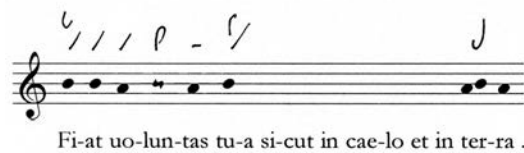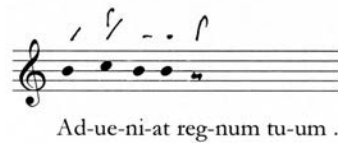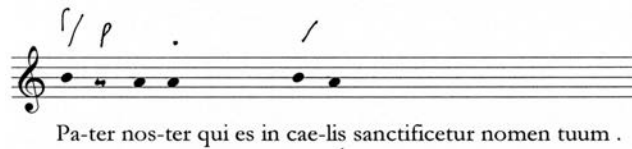
(read on Christmas Day) and Luke (read on the feast of the Epiphany). There is also notation for the gospel reading on St Stephen's Day in the Flavigny gospels, made in the eighth century (Autun BM S3(4)), in a Tours gospel book dated to the 830s (BNF lat. 250), and (sparsely) in fragments of a gospel book made circa 800 in Regensburg (Regensburg Bischöfliche Zentralbibliothek Fragm. II.3.1). The Autun and Tours notations indicate similar but not identical ways of delivering this reading: the Tours version is especially decorative at the ends of phrases. Notations for the Matthew genealogy are useful to the reader-performer in a significant way, that is, beyond the indications, syllable by syllable, of musical direction: besides indicating how a repeated melodic formula should be moulded to each separate phrase, music notation could also show how the Matthew genealogy formula – which is made with two distinct patterns – could be distributed throughout a text. The distribution of the two patterns indicated in the West Frankish gospel book BNF lat. 261 and the Breton gospel book Paris Bibliothèque Sainte Geneviève 17 repeats them every two phrases, thus ab ab ab, whereas in the Flavigny gospels the notation shows a division of the text into groups of three phrases, in the pattern aab aab aab.

The blessing of the paschal candle on the vigil of Easter, 'benedictio cerei', opened with the text *Exultet iam angelica*, followed by versicles and responses exchanged between deacon and worshippers ('*Dominus uobiscum*', '*Et cum spiritu tuo*' and so on), followed by an unusually long preface, the main part of the prayer. All parts of this blessing ritual were sung: according to one *ordo* composed somewhere in Francia circa 800 the blessing of the candle should be 'sung as the canon is sung' ('*decantando quasi canonem*').[163] That the proper preface passage should be recited in the usual manner seems also to be the implication of the surviving early notations, including those in the Poitiers 'Pontifical' Paris Arsenal 227 and in CSG 397.[164] Notation for the opening *Exultet* passage is provided in full in Arsenal 227 and in Tours BM 184,[165] part of a sacramentary made for St Martin of Tours in the last quarter of the ninth century: in both cases the melody remains relatively simple, with one or two notes to each syllable. Nevertheless, this is a recitation tone proper to the *Exultet* itself, and is not the same as the recitation tone for the canon.[166]

Later notations for the *Exultet* indicate that most melodies were simple (one or two notes per syllable), and moved within a restricted tonal range, as might be expected of a prayer. There was considerable regional variation among these recitation tones, however. Thus, as for the genealogy tones, the *Exultet* was being treated in a special way, and notation laying out how to sing it indicates care for its delivery. From this point of view the presence of notation for the opening of the preface in CSG 397 is especially significant. For this book was a kind of personal pocketbook ('*vademecum*') belonging to Grimald, Archchaplain of Louis the German (848–70), later Chancellor (858–70), and Abbot of Sankt Gallen 841–72: in this book he collected computistical material and texts about natural history, school texts, poetry, texts for liturgical use, obits galore and many snippets (the names of the muses, the three divisions of music, epigrams and other bits of verse).[167] The liturgical material includes the

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[163] *Les Ordines Romani du haut moyen âge*, ed. Michel Andrieu, Spicilegium sacrum Lovaniense 11, 23, 24, 28, 29, 5 vols. (Louvain, 1931–61), III, 404 (*Ordo* XXVIII). See also Georges Benoît-Castelli, 'Le "Praeconium paschale"', *EL* 67 (1953), 309–34.

[164] Using the recitation tone for proper prefaces provided in the *Liber Usualis*, Solange Corbin provided a reconstruction of the *Exultet* preface melody in Arsenal 227, fols. 202v–204r: *Die Neumen*, 3.39–40.

[165] Arsenal 227, fol. 202r; Tours BM 184, fol. 64v (from the second, and thus the earliest of the three sacramentaries incorporated into BNF lat. 9430 and Tours BM 184). On the sacramentaries incorporated into these two manuscripts see Delisle, 'Mémoire sur d'anciens sacramentaires'; this analysis was reproduced in Victor Leroquais, *Les Sacramentaires et les missels manuscrits des bibliothèques publiques de France*, 4 vols. (Macon: Protat Frères, 1924), I, 44–51.

[166] The Tours melody is close to one commonly found in western France: see Benoît-Castelli, 'Praeconium', 328–9. The melody in Arsenal 227 is close to this but not identical.

[167] On the content of this manuscript, as well as ideas about its genesis, see Bernard Bischoff, 'Bücher am Hofe Ludwigs des deutschen und die Privatbibliothek des Kanzlers Grimalt', in his *MAS* III (Stuttgart: Hiersemann, 1981), 187–212, at 201ff. For qualification of Bischoff's presentation of the book as a personal *vademecum*, see Uwe Grupp, 'Der Codex Sangallensis 397 – ein persönliches Handbuch Grimalds von St. Gallen?', *Deutsches Archiv* 70 (2014), 425–63.

Laudes (pp. 2–4), the *Exultet* prologue and preface (pp. 30–2), prayers for the Easter *Benedictio ignis* (pp. 32–3) and – if its inscription here was for liturgical purposes – a Greek alphabet, which was to be written across the church floor in the ceremony for dedication of a church or on Ash Wednesday (p. 25).

The book was used by Grimald over a long period of his life, and includes entries by many different scribes (none of whom can be identified as Grimald himself);[168] since the greater part of the material in this book was certainly written out while Grimald was at court, there is no immediate reason to associate these entries directly with Sankt Gallen. But the *Laudes, Exultet* and *Benedictio ignis* are in the third of three layers in the book (pp. 1–36), a section that also includes the obit notice of Louis the German (p. 18); since Louis died in 870, it seems likely that Grimald made use of the book right up until his death at the abbey of Sankt Gallen in 872. The hand that wrote out these liturgical texts can be found in several other extant codices, including two others that became part of the library at Sankt Gallen:[169] the scribe seems to have been a person whose path crossed that of Grimald often. Since the *Laudes* were first copied in a version relating to the period of Leo IV's papacy (847–55), and then altered, so that '*Leoni*' could be replaced by '*Nicolao*' (pope, 858–67), there is a clear implication that these texts were copied for use while Grimald was at court; indeed, it would have been part of Grimald's duties as archchaplain to assure the singing of the *Laudes* and the *Exultet* at the appropriate moments. Cumulatively, all this information encourages the inference that the neumes written over the first two lines were entered in the middle years of the century. Besides opening a realm of speculation about ways in which knowledge of a music script might have reached the abbey south of the Bodensee, this sets the Frankish script written into Grimald's book directly into the central seat of power in Eastern Francia in the mid-ninth century.

Finally, the notation by a contemporary hand of the phrase 'Heli. heli. læma zabdani hoc est deus meus. deus meus ut quid me dereliquisti' in the Landévennec Gospels (New York Public Library 115) is the earliest extant example to show how Christ's cry from the cross (Matt. 27.46) could be forcefully singled out.[170] Preceded by 'clamauit Ihesus uoce magna dicens', the passage in direct speech is given a much more elaborate melody than the standard recitation tone. Evidently, the reader was intended to abandon simple delivery for this one phrase, and to deliver the cry with passion.

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[168] On the question of the script Grimald might have written, see Bischoff, 'Bücher am Hofe', 204.

[169] *Ibid.*, 198–9.

[170] The second 'deus meus' was added in the margin by the music scribe. On this manuscript, see Michel Huglo, 'Les Évangiles de Landévennec (New York, Public Library, De Ricci 115)', in *Landévennec et le monachisme breton dans le haut moyen âge, Actes du colloque du 15ᵉ centenaire de l'abbaye de Landévennec, 25–26–27 avril 1985* (Landévennec: Association Landévennec, 1986), 245–52; on the notation for the 'Heli heli' passage see also K. Drew Hartzell, *Catalogue of Manuscripts Written or Owned in England up to 1200 Containing Music* (Woodbridge: Boydell, 2006), 354.

3.7.4 Liturgical Chant: Gregorian Propers and New Repertories

The number of instances of notated liturgical chants written before the year 900 into margins or other empty spaces in books of all kinds – liturgical and non-liturgical – is substantial: examples include responsories for saints' offices, Alleluias and processional chants. In addition, notation was added to many texts of chants already present in books: these include antiphons to be sung during tonsure, notated in a Tours sacramentary,[171] an antiphon to be sung during a funeral, notated in an Echternach sacramentary,[172] and the notation of Ordinary chants in Greek, the *Doxa* in a St Amand sacramentary and the *Pistevo* in a book made in Tours or Fleury.[173] There is a noticeable preponderance of chants recorded in sacramentaries and not in other liturgical books; for example, those which might be directly made for a cantor. These are chants that were sung occasionally, when required, rather than on regular days during the year. It is difficult not to see such notations as primarily for the purpose of record, the archiving of ways of singing them being a support of an oral transmission that might otherwise be weakened by irregular use.

The most impressive numbers, when considering the notation of liturgical chants, however, are found in the lists of notated chant books: ten books of chants for the mass (leaving aside the Old Hispanic fragment BNF nal. 2199), eight books of chants for the office and six missals (Table 13). With the exception of three,[174] all these books are virtual, surviving only in the form of fragments, an aspect that probably explains why the phenomenon of ninth-century notated chant books has been more or less ignored.[175] The range of dates, from the Oxford antiphoner fragment written in the the second quarter of the century, through several fragments dated to the third quarter, and then a grand succession of fragments and books made in the last quarter and towards the end of the ninth or beginning of the tenth century, suggests an early start, moving relatively slowly over a period of up to thirty to forty years, followed in the last quarter of the century by widespread activity of this kind. By the end of the century, repertories of chant were being written out in all the scripts classified above, with one exception, and that exception – the Aquitanian script – is represented in a book itself copied very close to 900, but in which music notation was added sporadically after that (Albi 44). The lack of examples of chant books made in West Francia and written in the Frankish script can also be set aside as insignificant and probably the result of large-scale destruction; that script is represented in fragments of a Gradual made close to 900 (Autun BM S3(4), fols. 3–4), and in the little cantor's collection represented by

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[171] BNF lat. 9430, fol. 267v.

[172] BNF lat. 9433, fol. 251v.

[173] BNF lat. 2291, fol. 16r; BAV Reg. lat. 215, fol. 130v–131r. In both cases there is no sure way of dating the notation: equally there is no reason in either case not to consider the notation more or less contemporary.

[174] The three more or less complete books are Laon 239, Milan D 84 inf. and CSG 359.

[175] By implication this was argued for by Kenneth Levy, but without knowledge in the form of extant manuscripts: see his 'Charlemagne's Archetype of Gregorian Chant'.

Table 13 Chant books.

MS	Content	Ms date	Musical script	*Katalog* number	*Katalog* place of origin
MASS					
Graz UB 748 front and back pastedowns	Gradual (two folios)	s.ix/x or s.x *in*	Frankish (West)	1457	France
Laon BM 9 back endleaf	Gradual (two folios)	s.ix ⁴/₄	Lotharingian		
Laon BM 121 front endleaf	Gradual (two folios)	s.ix ³/₃	Lotharingian	2078	NE France (Laon?)
Laon BM 239	Gradual	s.ix ⁴/₄	Lotharingian	2094	NE France
Laon BM 266 front endleaf	Gradual (two folios)	s.ix ⁴/₄	Lotharingian	2097	NE France (Laon?)
Milan Ambros. B 48 sup. fols. 142–3	Antiphoner-Gradual (two folios)	s. ix/x	Frankish (Italian)	2625	France?
Munich BSB clm 14735 fols. 9–28	Gradual (ten folios, palimpsested)	s.ix/x	Frankish (West)	3254	prob. France
Paris BNF nal. 2199 fols. 14–16	Antiphoner (Mass and Office) (three folios)	s.ix/x	Frankish (Old Hispanic)		
St Gallen SB 359 pp. 5–6, 24–162	Cantatorium	s.ix *ex*	Frankish (East)	5738	St Gallen
St Gallen SB 390 between pp. 4–5 and 190–1 & St Gallen SB 391 between pp. 4–5	*Versicularium* (three binding strips)	s.ix ⁴/₄	Frankish (East)		[St Gallen]
Valenciennes BM 407 endleaves	Gradual (bifolium)	s.ix ²/₂	Breton	6395	N France
Vatican BAV Pal. lat. 862 fols. 68, 69, 71–2, 74–5, 77, 83, 91, 102	Gradual (palimpsested fragment)	s.ix/x	Nonantolan	6564	Italy
OFFICE					
Leiden BRU BPL 25 fols. 1, 42, 43	Antiphoner (three folios)	s.ix ¾	Breton	2135	perhaps NW France
Leipzig UB 1609 fol. 1	Antiphoner (one folio)	s.ix/x	Frankish (West)		
Munich BSB cgm 6943 endleaves & Vienna ÖNB ser. nova 3645	Antiphoner (two folios and four folios)	s.ix ⁴/₄	Frankish (East)	2918	S Germany
Munich BSB clm 29316/1	Antiphoner (one folio)	s.ix/x or s.x *in*	Frankish (East)	3421	prob. Germany
Oxford BL Auct. F.4.26 front endleaf	Antiphoner (one folio)	s.ix ²/₄	Breton	3773	W France
Paris SG 223 fols. I, II, 99, 100	Antiphoner (eight folios)	s.ix ¾	Breton	5166	France

Table 13 (cont.)

MS	Content	Ms date	Musical script	*Katalog* number	*Katalog* place of origin
St Gallen SB 1397 pp. 13–16	Antiphoner (two folios)	s.ix ¾	Frankish (East)	5894	SW Germany/ Switzerland
Vienna ÖNB 612 fol. 74 (endleaf)	Antiphoner (half folio fragment)	s.ix ¾	Palaeofrankish	7143	Germany
Zurich ZB Rheinau 26 front endleaf	Antiphoner (two folios)	s.ix ¾	Frankish (East)	7606	
NOTATED MISSALS					
Berlin SB (Krakow BJ) theol. lat. qu. 124 fols. II–III	Missal (two bifolios)	s. ix/x or x *in*	Frankish (Italian)	472	Italy?
Heidelberg UB 3953. I	Missal (two folios)	s.ix ²⁄₂	Frankish (Italian)	1509	N Italy
Milan Ambros. D 84 inf.	Missal	s. ix/x	Frankish (Italian)	2616	Bobbio
Oxford Bodleian D'Orville 175 fols. 1-50	Missal (palimpsested fragment)	s.ix/x	Frankish (Italian)	3793	Italy
Vatican BAV Vat. lat. 5749 fol. 128	Missal (one folio)	s.ix/x	Frankish (Italian)	6908	N Italy [Bobbio]
Vatican BAV Vat. lat. 5775 fol. 156	Missal (one folio)	s.ix *med*	Frankish (Italian)	6926	Italy [Bobbio]
OTHER TYPES OF COLLECTION					
Munich BSB clm 6431	*Officium mortuorum*	s.ix/x	Frankish (East)	3086	Swabia
Paris Mazarine 1707 fols. 89v–91r	Easter liturgy	s.ix ¾	Breton	3939	Reims

Leipzig, Universitätsbibliothek, Rep. I 93 of the early tenth century, as well as being the most prevalent script used in other ways. It is worth noting that the evidence for notation of a chant book in the Palaeofrankish script is weaker than that for any other script type, since the almost illegible half folio now in Vienna, with part of the office for St Denis, does not provide a strong foundation for arguing this case.

Whether surviving in books or fragments of books, extant examples from notated chant books, recording the main repertories of mass and office chants, outnumber by some distance those for the new repertories of liturgical chant: melismatic sequences without text, texted sequences, tropes and prosulae. For these the total number of manuscript sources, in the form of marginalia as well as book fragments, adds up to nine (Table 14). Whether or not the ratio twenty-three (chant books) to nine (records of new repertories) has deep enough roots in ninth-century practice to be at all representative – rather than being an unreliable statistic

Table 14 New repertories of liturgical chant.

MS	Content	Ms date	Added material date	*Katalog* number	*Katalog* place of origin
Autun BM S28 fol. 64r	Untexted sequences	s.vii	s.ix *ex* / s.x *in*	158a	S France, then Autun
Munich BSB clm 9543 fol. 199v	Prosula *Psalle modulamina*	s.ix ²⁄₄	s.ix ²⁄₄	3108	Regensburg
Munich BSB clm 29308/1	Notker sequences (six folios)	s.ix/x		3416	S Germany
Paris BNF lat. 2373 fol. 1r	Untexted sequence melodies	s.ix ¾	nu	4179	NE France (court?)
Paris BNF lat. 4697 fols. 26v–27r	*Tamquam/Fabrice* melismas	s.ix ²⁄₂	s.ix *ex*	4326	prob. Clermont-Ferrand
Paris BNF lat. 10587	Notker *Liber Ymnorum* (fragment)	s.ix/x			[St Gallen]
St Gallen KB Vadiana 317 pp. 26–30	Notker sequences	s.ix *med*	s.ix *ex*	5484	St Gallen
St Gallen SB 614 p. 48	*Fabrice* prosulae	s.ix *med*	s.ix ²⁄₂	5814	Soissons?
Wolfenbüttel HAB Weiss. 66 fol. 53v	Sequence *Laudes dicamus*	s.ix ⁴⁄₄–x	s.ix ⁴⁄₄ – s.x	7411–2	Weissenburg

wrought by chance – it certainly will not support any argument that, by 900, music notation was being used to ensure the healthy transmission of less widespread, more localized, new compositions. The clear inference to be drawn from these two lists is that, by 900, music notation had been widely integrated into the daily practice of those responsible for maintaining the music of the liturgy – those who acted as cantors. Indeed, alongside the body of notated *versus*, liturgical chant is effectively the dominant context for the use of music notation by the end of the ninth century. That neither argues for nor against the invention of music notation for this purpose, merely that, once available, music notation quickly became a tool more useful to cantors than to anyone else. The juxtaposition of surviving chant books with surviving examples from the new repertories also underlines the importance of not thinking about writing in a simple binary opposition in relation to orality: if music notation was written simply to ensure the transmission of melodies, then it would surely need to be used more rather than less for new compositions. Even if those new compositions were primarily local, made by cantors for use in the institutions they served directly, we still might have expected to find many individual notations – as is the case for ways of singing *versus*.

Of course, the most difficult question we meet in the consideration of notated chant books is why a cantor – used to working with books of text, and a highly ordered memory of chant melodies, with a modal grammar set out in theory – should be at all interested in music notation. The answer, in relation to the oldest (and no longer extant) notations of chant,

Example 7 Gradual *Saluum fac* (CSG 359, p. 73; Milan D 84 inf., fol. 70r; Laon 239, fol. 28v; GT 354).

must be in some way tied up with experimentation: trying out the musical notation of liturgical chants to see what it might produce. Once that step had been taken, it is much easier to understand that many cantors might have seen ways of developing the value of music notation. A brief examination of notations written into each of the three surviving ninth-century chant books – Laon 239, Milan D 84 inf., and Sankt Gallen 359 – will advance our account of how cantors were using music notation. In Example 7 notations for the first phrase of the Gradual *Saluum fac populum tuum* from each of these three books, and in the pitches on lines presented in the *Graduale Triplex*, are written out; the version on lines is not presented as an interpretation of these notations, but merely to aid a sense of melodic direction, as the neumes are read. Even in this short passage (less than a quarter of the whole responsory and verse), the amount of musical information the reader needs to draw from his/her memory far exceeds that required in reading any other category of notation already discussed. This is an elaborate melody, with a wide tonal range (in the passage shown here an octave), a diversity of ways of treating individual syllables, from one note to eight, or, in the case of '*domine*', an added closing phrase, after eight notes, of a further seventeen, and some special types of voice production, represented by neumes written over '*Saluum*'. In the sense that what a cantor had to do in singing a chant such as this was far more musically complicated than the singing of a line of verse or of a reading or prayer, what this notation offered a reader was of a different order to other categories of notation: there is already more information here, in the sheer numbers of signs, and many other details, than in notations for *versus* or for prayers. Yet there is also a greater need to draw on memory, since, from a musical point of view, there is rather more going on.

The notations in the Sankt Gallen and Bobbio books in particular offer little information about the relative pitches between successive neumes; although in both books the three opening neumes, for the first syllable '*Saluum*', are each set at a higher level, apparently matching the melodic rise of the first note of each (**G a c**), this is not how neumes beginning

each new syllable are treated. The neume for '*tuum*', starting on a high pitch (**d**), begins at the same vertical level as the neume for the previous syllable '*populum*', starting a tone below, *and* at the same vertical level as the syllable previous to that, '*populum*', beginning a long way below (notated on lines as **G**, a fifth below). Although such scripts could be written in such a way as to convey more information about intervallic relationships between successive neumes, as in the *versus* notated in the Sankt Gallen Boethius, here they are not being written in such a fashion. Given the amount of other detail recorded here, it has to be concluded that this was a straightforward choice – between the preservation of one kind of information and the use of a greater amount of parchment; and that cantors simply did not demand or rely on this kind of written signal. In this sense the information about the intervals between successive neumes recorded by the Laon notator is of a different order, with much clearer movement up and down, but it is still 'directional' and thus indicative, rather than precise. At two points in this passage the Sankt Gallen scribe added marks intended to help the reader get an interval right: at the end of the first neume, a sign that indicates three notes in the relation low–high–low, he wrote 'i' for *iusum*: the point here is that he could not pull the descending stroke down – there was no space because of the 'l' underneath – but wanted to remind the reader that this opening gesture did not follow the melodic shape tone up, tone down, but rather fell through a third. In the sense that the 'i' is a kind of *nota bene* mark, more a warning not to sing the neume in one particular way, leaving only one other possibility (since at this point the melody would be very unlikely to fall more than a third), this *littera significativa* underlines the more general lack of need of precise intervallic information, the extent to which such a writing procedure is intended to lead rather than to supplant the memory of the reader. Much the same explanation can be made for the second pitch letter, 's' for *sursum* at the end of the reproduced passage.

Each of the notations offers information about the shape of the melody for individual syllables of the text, and more or less information about the movement from one syllable to the next. There is also information about speed/emphasis: this is present in the Laon notation in letters ('t' for *tenere* and 'n' for *naturaliter*), as well as in the forms of neumes (joined or separated graphs).[176] At the opening, three successive groups of notes follow the melodic shape low–high–low, and could have been represented with the same neume form for each group. But the Laon scribe wrote the first two groups as a series of three separate marks, and only the last group as a joined form, in one stroke; he also added the letter 'a' above the second, underlining that it should move more slowly. This differentiation between each of the three note groups is also clear in the neumes written by the Sankt Gallen and Bobbio scribes, both of whom wrote the normal, un-nuanced form for a low–high–low note pattern for the third group, a form indicating three long notes for the second group, and a different form – that appears at least to indicate the lengthening or

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[176] For explanation and discussion of this graphic technique see below, pp. 248–51.

emphasis of the first note – for the first group. The procedure of separating rather than joining forms is followed in all three notations for the first syllable of '*domine*', and here, as if to stress to the reader that this first note should be treated properly before continuing to the next, the Sankt Gallen scribe wrote an extra stroke across the top of the neume. Such cross-strokes are also used several times further on in this notation, as well as 'c' (*celeriter*) and 'cm' (*celeriter mediocriter*). A final example of the differentiation of note length/emphasis is on the seventh and eighth notes for '*domine*', where the Laon scribe wrote a dot followed by a short curved stroke, adding to the second for good measure 't', and the Sankt Gallen scribe wrote two comma-like marks, but took care to add a horizontal foot to the second. At this point the Bobbio scribe did not write different graphic signs.

In all three of these notations, the writing of musical signs is being used as a way of recording a way of singing the melody for *Saluum fac*, a record into which the reader could look to check his/her memory: to the extent that the amount of information *not* recorded remains extensive, we have to read such chant notations as guides rather than imperfect substitutes. Yet, having discovered that music notation could be used in this way, both the Laon and the Sankt Gallen scribes are doing rather more with it than the Bobbio scribe. Since the Sankt Gallen scribe was writing the same kind of script as the Bobbio scribe, the juxtaposition of the two is all the more instructive about the kinds of detail and the techniques for recording it used by the Sankt Gallen scribe. Both he and the Laon scribe were constantly concerned about articulation of the melody, and the speed/emphasis of individual notes – and occasionally intervallic distances. What they inscribed could be read simply as detailed support of quite nuanced ways of singing this chant: in reading the singer would remember well. But their inscriptions could also be read as attempts to record and thus archive nuanced ways of singing this chant that were approved as correct.[177]

3.7.5 The *Liber Ymnorum* of Notker Balbulus

In using examples of notations written at the abbey of Sankt Gallen (or, in the case of Grimald's *vademecum*, taken to Sankt Gallen) to set the course of this short review of extant ninth-century notations, it has not been my intention to argue for the abbey as a creative or influential centre of any greater importance than any other in relation to music script. What is unusual about this abbey in the Swiss mountains is not its situation in the ninth century, but the lens through which a modern scholar may look towards it. For the number of its books that have been preserved (and in the case of many, are still in the Stiftsbibliothek in Sankt Gallen) *is* unusual. It is thus the chance to see the diversity of uses of music notation in manuscripts made and used at a Benedictine abbey in the ninth century that suggested the choice of Sankt Gallen. The range of notations in Sankt Gallen

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[177] On this see further below, pp. 340–45.

manuscripts, from the complete collection of Introit and Communion verses, through many notations of *versus*, to the extremely refined notation written in the Cantatorium makes us aware not only of a profusion of uses but also of the fact of different ways of using notational techniques in order to exploit the potential of music writing in different ways and to different ends.

There is, nevertheless, one manner of incorporating music notation into a book made at Sankt Gallen that represents a new initiative on the part of its monks. That is the design of a new kind of page layout, with its own ruling system, that would set aside a dedicated part of the page for music notation. This is the basis for the fragmentary copy of Notker Balbulus's *Liber Ymnorum* now in the Bibliothèque nationale (BNF lat. 10587; see Figure 17). In making texts for sequence melodies that were eventually collected as a 'Liber Ymnorum', Notker Balbulus had started out by composing *versus* for these melodies in such a way that syllables and accentual patterns corresponded to 'the gestures of the melodic segments', and individual syllables were matched to individual notes:[178] thus he sought to anchor these very long melodies in his memory.[179] This passage in the dedicatory preface composed by Notker for his collection describes a way of remembering melodies without any mention of writing as a support: the whole pattern of the melody would be reflected in the pattern of the newly created text, and each of these two elements would support memory of the other.

This strategy of recall, to make something new (in text, in this case) that corresponded to and fitted with an earlier fabric (in music, in this case) was the mode and intention of the act of composition of new texts: at a later stage – and during Notker's lifetime – however, writing did become a part of the enterprise. For the *Liber Ymnorum* was sent (or presented) to a dedicatee, Liutward, Bishop of Vercelli and Abbot of Bobbio, between 881 and 887.[180] That first copy, presumably well made, has not survived; but a fragment of a *Liber Ymnorum*, containing the full dedicatory preface, has been dated by Hoffmann circa 900 (BNF lat. 10587),[181] and was copied by the most expert Sankt Gallen scribe of the period, Sintram. This scribe was also responsible for the *Evangelium longum* (CSG 53), bound between wooden boards with inset ivories, said to have been carved by Notker's friend and co-monk, Tuotilo:[182] Ekkehard's identification of Sintram as copyist of this large fine evangeliary can be confirmed through comparison of the *Evangelium longum* with a charter signed by Sintram and dated 885.[183] In the charter and in some pages of the evangeliary the quality of

[178] 'singulae motus cantilenae': see *The* Liber Ymnorum *of Notker Balbulus*, ed. Calvin M. Bower, 2 vols., Henry Bradshaw Society 121–222 (Woodbridge: Boydell and Brewer, 2016), I, 129 and II, 1.

[179] *Ibid.*, II, 1.

[180] *Ibid.*, II, 1.

[181] Hartmut Hoffmann, *Buchkunst und Königtum im Ottonischen und frühsalischen Reich*, Schriften der MGH 30, 2 vols. (Stuttgart: Anton Hiersemann, 1986), I, 390.

[182] CSG 53; on this manuscript see especially von Euw, *Buchkunst*, I, no. 108.

[183] Stiftsarchiv Sankt Gallen IV 384. On Sintram, see Rupert Schaab, *Mönch in Sankt Gallen. Zur inneren Geschichte eines frühmittelalterlichen Klosters*, Vorträge und Forschungen 47 (Ostfildern: Thorbecke, 2003), 182.
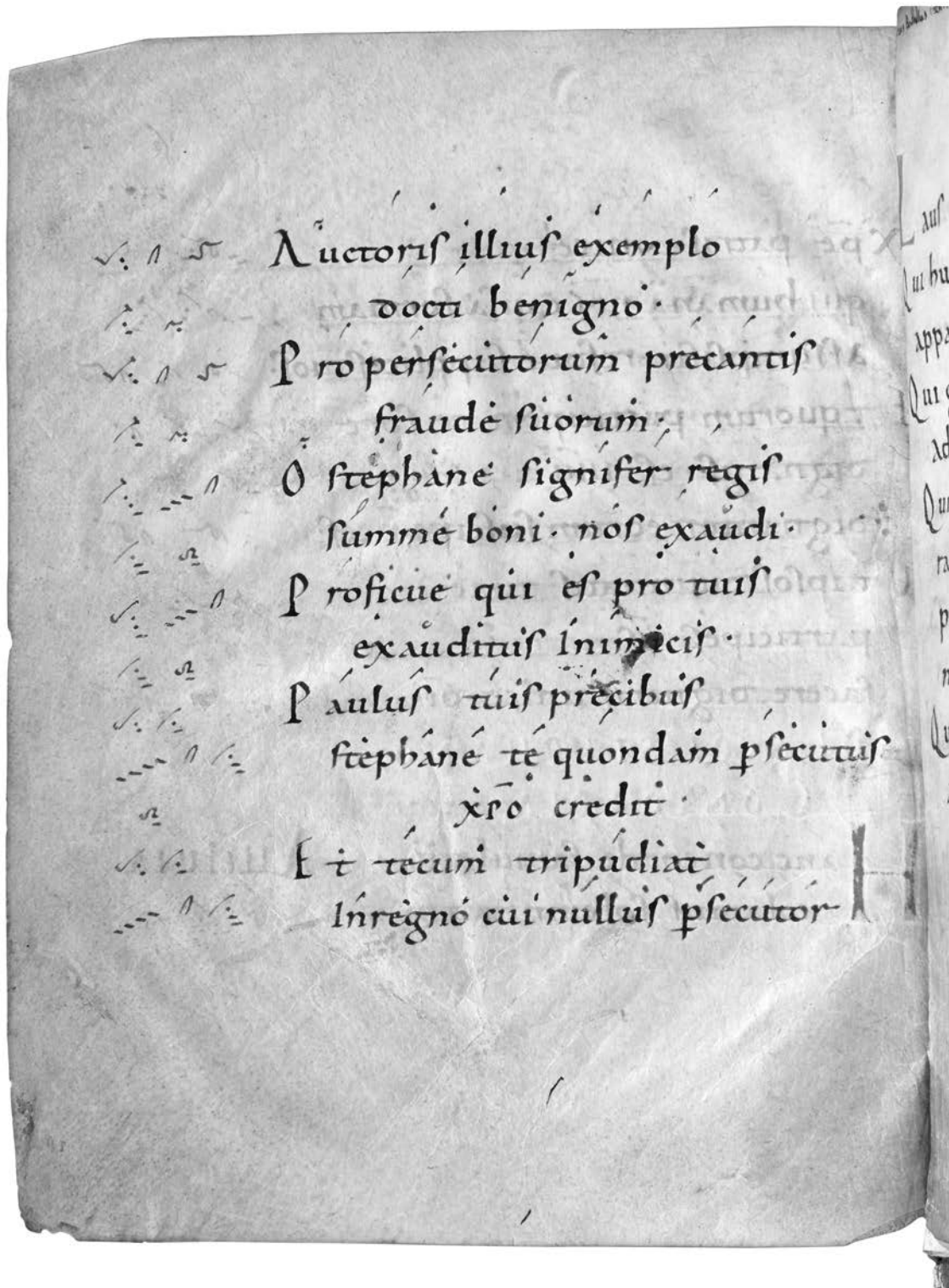
Figure 17 Paris, Bibliothèque nationale de France lat. 10587, fol. 6v.

Sintram's hand when writing out text in small sizes can be seen: even writing in this small size of text, he did not lose the good shaping of letters.[184] The identification of Sintram as the scribe of lat. 10587 provides an explanation as to why it was not Notker himself who undertook the task of copying the *Liber Ymnorum*: this was a highly competent scribe who could write in the small format required for the *libellus*. If this copy – at least its layout and text – was made by the scribe considered in the Sankt Gallen community at this time as the best, the case for BNF lat. 10587 as a copy of the original *libellus* presented or sent to Liutward is significantly strengthened.[185]

Whether close to the dedication *libellus* or not, it is more than likely that in its parallel columns for text and for music notation, BNF lat. 10587 directly reflects the layout of the little book made in the 880s.[186] And, indeed, it is clear that Notker's description of having matched individual syllables to melodic gestures can be seen substantively in the content of those parallel columns (see Figure 17).[187] This is rendered explicit in written form by the juxtaposition line by line of matched short passages of melody and text, and further, through direct correspondence between words or word groups and neumes (see Example 8).[188] On fol. 6v, the fifth line of text, '*O Stephane signifer regis*', sits beside groups of neumes for four and then five notes, corresponding to the first two and the last two words. On the next line, '*summe boni nos exaudi*' sits beside neumes for four and then four notes. On the next line, '*Pro[ficue]*' is given two notes; for '*proficue qui es pro tuis*', the neumes are in two groups of five notes, and so on. Such correspondences of divisions between words or word groups and between neume groups are not always seen in the way in which the words and melody are written out, but they are present at some point in every line, if not in every part of every line. This was a way of writing out a sequence that would allow a reader to see precisely how a new text would fit a melody already known to him/her: the way in which this is achieved here is rather different to the *Psalle modulamina* entry in Munich 9543 – where the reader needs to use the text tag '*Christus resurgens*' to recall an Alleluia, and then, reading through the passage, see and work out syllable by syllable how the new text fitted a remembered melody. The effect of writing the sequence melodies out in compound neumes, placed in the margin, rather than in signs for individual notes written above the text, is to provide the reader with much greater clarity about melodic direction: and this would have rendered recognition of melodic behaviour through matching the visual record to a memory much easier. At this level of basic identification, and then at the specific level of the number and identity of

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[184] In CSG 53 there are many examples of a smaller writing size on the pages from 237 to the end of the book.

[185] Hoffmann's suggestion that this might be the dedication copy is directly based on the quality of the scribal hand and of the little book that he describes as 'einfach aber schön' (*Buchkunst*, I, 390).

[186] For the dimensions of this writing frame, see Susan Rankin, 'The Earliest Sources of Notker's Sequences: St Gallen, Vadiana 317, and Paris, Bibliothèque nationale lat. 10587', *EMH* 10 (1991), 201–33.

[187] The neumes written on the left-hand side are part of the original presentation of this sequence (Notker's *Hanc concordi*), whereas the neumes written for single notes between the lines of text were added later.

[188] The version on staves from Notker, *The* Liber Ymnorum, I, 137–8.

Example 8 Extract from the sequence *Hanc concordi*.

O Ste-pha-ne si-gni-fer re-gis

sum-me bo-ni nos ex-au-di

Pro-fi- cu-e qui es pro tu-is

ex-au-di-tus i- ni-mi-cis

individual notes, this notation worked to help the reader in a fashion expressly suited to this genre of chant. Sequence melodies were sung differently in different places, as comparison of concordant melodies recorded in different localities demonstrates:[189] that Notker was aware of that variability is clear in his own dedicatory preface. Yet the exact form of the sequence melody was of primary importance, since the new text was fitted carefully to it, one syllable to one note. The advantage of this new way of writing out text and melody was then to allow a reader to see in exactly which form, note by note, the sequence melody was being followed, and how the new text should be coordinated with it.

Through the dedication to Liutward, a clear date for the design of this new layout incorporating music notation can be established. It is a period when the holdings of the library at Sankt Gallen were being substantially increased, a business in which Notker himself had a large hand, organizing the work of teams of scribes as well as copying long passages himself.[190] In the context of discussions of music notation, perhaps more significant than Notker's own involvement with the preparation of books is the extent to which books made in the abbey in the last quarter of the ninth and the early tenth century reflect a strong scriptorium discipline, with a recognizable 'Sankt Gallen' style of script, schemes for making fine decorated letters, procedures for organizing book copying, the availability of good

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[189] On this, see Richard Crocker, *The Early Medieval Sequence* (Berkeley: University of California Press, 1977); and Notker, *The* Liber Ymnorum, II, 7–8.

[190] See Susan Rankin, 'Notker bibliothecarius', in Katie Buygis, A. B. Kraebel and Margot Fassler (eds.), *Medieval Cantors and their Craft: Music, Liturgy, and the Shaping of History (800–1500)* (Woodbridge: York Medieval Press with Boydell and Brewer, 2017), 41–58.

quality parchment and ink, as well as colours, including much gold and silver. This was the kind of situation in which a community interested in exploring a new writing technique could afford to think about it, try it out, and – in the case of the sequence collection – invent a new kind of music book.

Finally, the relation between Sankt Gallen and Bobbio will help to undo the final knot in the puzzle of why the *Liber Ymnorum* was written out in this new format. The Italian abbey had been founded by Columbanus, that same Irish monk with whom Gallus had journeyed from Bangor. Notker's dedication to Liutward expressly names him as 'Abbot of the monastery of the most holy Columbanus and defender of the cell of his disciple, the most gentle Gallus'.[191] This was a connection of which the monks of Sankt Gallen, and no doubt the monks of Bobbio, remained strongly aware. The music script written at Bobbio in this period was as close to the Sankt Gallen script as it is possible to get, having the same repertory of graphic signs, set at the same angles.[192] The main difference between the examples of notation surviving from these two institutions is not in terms of basic techniques, but the greater degree of nuance and scriptorium discipline exhibited by notations written at Sankt Gallen.

The point here is that Notker (or the scribes with whom he was cooperating) could not have filled his little book with music notation if he had not known that someone at Bobbio would be able to read it: he must have been aware of knowledge in the community at Bobbio of how to write musical signs and thus record melodies and read notations. The new layout designed at Sankt Gallen then acts as a very clear guide: the melodies are there in one column, and through reading those, and then associating them with the texts in the inner columns of the pages, someone could sing the new compositions to Abbot Liutward. A notation written over the text syllables themselves, and thus split into single notes, would not have rendered the melodies so immediately recognizable to the person reading the book: in addition this parallel form of writing out the sequences provided control of the precise way of singing each melody. This was a way of using music notation in order to allow it to be understood without sending a singer at the same time: this writing could itself speak across a geographical distance of 440 kilometres – at least fourteen days' travel.[193] The *Liber Ymnorum*, as first laid out, provides evidence not for the simple recording and archiving of music, but for a way of sending it: the monks of Sankt Gallen had found a way of 'conveying the utterances of those who are absent'.[194] Isidore would have been impressed.

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[191] 'abbatique coenobii sanctissimi Columbani, ac defensori cellulae discipuli eius mitissimi Galli'.

[192] See further below, pp. 194–207.

[193] On this calculation, see Max Schär, *Gallus. Der Heilige in seiner Zeit* (Basel: Schwabe, 2011), 404; I am grateful to Stiftsarchivar Peter Erhart for help in this matter.

[194] See Ch 1, n. 11.

4

Graphic Techniques and Strategies

4.1 GRAPHIC AND SPATIAL CHARACTERISTICS OF NINTH-CENTURY MUSIC SCRIPTS

In the musical notations for the Gradual *Adiuuabit* written out by four music scribes within the two decades before and the two decades after 900 (Example 9), the sharing of procedures by different musical notations is immediately evident.[1] The neumes over *Adiuuabit* are written out on one horizontal level (after a first sign, that may be lower), while the neumes written over *uultu* trace a rising diagonal. The neumes over *Adiuuabit* are mostly written as short separate strokes, while the neumes over *suo* are mostly longer, composed of carefully shaped, twisted and turned traces. The neumes over *suo* are written in all the notations in combinations of different forms. In the notation of W, there is a point followed by four zigzag forms; in the other three notations the neumes are more broken up, and alternate between shorter and longer forms.

In all these notations the way in which neumes are placed in the space above the text is based on a metaphor developed in antiquity that associates the position of sounds in acoustic space with position in physical space:[2] sounds that are shrill ('*acutus*') are designated 'higher', and

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[1] For manuscripts repeatedly referred to in this chapter, the following sigla are used:

    A Autun Bibliothèque municipale S3(4), endleaves
    C *olim* Chartres Bibliothèque municipale 47
    G Graz Universitätsbibliothek 748, front and back pastedowns
    La Laon Bibliothèque municipale 239
    L2 Laon Bibliothèque municipale 266
    Le Leipzig Universitätsbibliothek Rep. I 93 (*olim* 169)
    M Milan Biblioteca Ambrosiana D 84 inf.
    S Sankt Gallen Stiftsbibliothek 359
    W Wolfenbüttel Herzog August Bibliothek Guelf 476 Helmst., endleaves

On the presentation of pitched versions on lines alongside those in neumatic scripts in these figures, see p. xvi; in this passage there is disagreement about the interval between the syllables of *eam*, already visible in the neumed versions (for *eam* S intends the higher **c**, La the lower **b**) – a distinction that continues in pitched notations of the melody.

[2] On the background to this metaphor in antique music theory, see below, pp. 283–85; on its appropriation in the early Middle Ages, see Marie-Elisabeth Duchez, 'La réprésentation spatio-verticale du caractère musical grave-

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Example 9 The opening of the Gradual *Adiuuabit* (S p. 55, C fol. 12r, La fol. 14v, W fol. 1r, GT 526).

A- diu-ua-   bit e- am de-   us   uul-   tu   su-   o

sounds that are heavy ('*gravis*') are designated 'lower'. That metaphor allows writing in physical space to mirror the treatment of acoustic space, so that movement of the pen up the page generally indicates movement towards 'higher' sounds, while movement of the pen down the page generally indicates movement to 'lower' sounds, and writing along one horizontal level indicates no movement to higher or lower sounds. This lack of movement up or down in the melodic expression of *Adiuuabit* and movement upwards in the melodic expression of *uultu* can be seen in the version of the chant melody written out below on a stave: although not intended as a direct interpretation of any of the notations above, this provides a reasonable general guide to the way in which medieval cantors sang the opening phrase of the Gradual *Adiuuabit*.

The principle behind these four notations is thus that the utterance of a simple sound – a single note – associated with one syllable can be written as a short stroke, as elementary as a point (but sometimes more than this); and that sounds associated with individual syllables that involve more than a single note are written in extended strokes. These signs sit in the space above the text, always starting above the syllable to which they refer (see Figure 18). The signs written for melodic expressions longer than one note are not always shown in continuous forms: although there are examples here of continuous strokes over *Adiuuabit* (S, C, L) and *eam* (W), more usually the signs over a syllable consist of a mixture of points and lines, written in shorter and longer traces.

A passage from *Alleluia V. Dominus regnauit*, as written out by four different scribes, shows similar grouping of notes (Example 10). For the end of the Alleluia *iubilus*,[3] the arrangement of

aigu et l'élaboration de la notion de hauteur de son dans la conscience musicale occidentale', *AM* 51 (1979), 54–73; and 'Description grammaticale et description arithmétique des phénomènes musicaux: le tournant du IXe siècle', in Jan P. Beckmann *et al.* (eds.), *Sprache und Erkenntnis im Mittelalter. Akten des VI. Internationalen Kongresses für mittelalterliche Philosophie der Société internationale pour l'étude de la philosophie médiévale 29. August–3. September 1977 in Bonn*, Miscellanaea Medievalia 13, 2 vols. (Berlin: De Gruyter, 1981), II, 561–79.

  [3] The long melisma on the final syllable, 'a', of *Alleluia*.
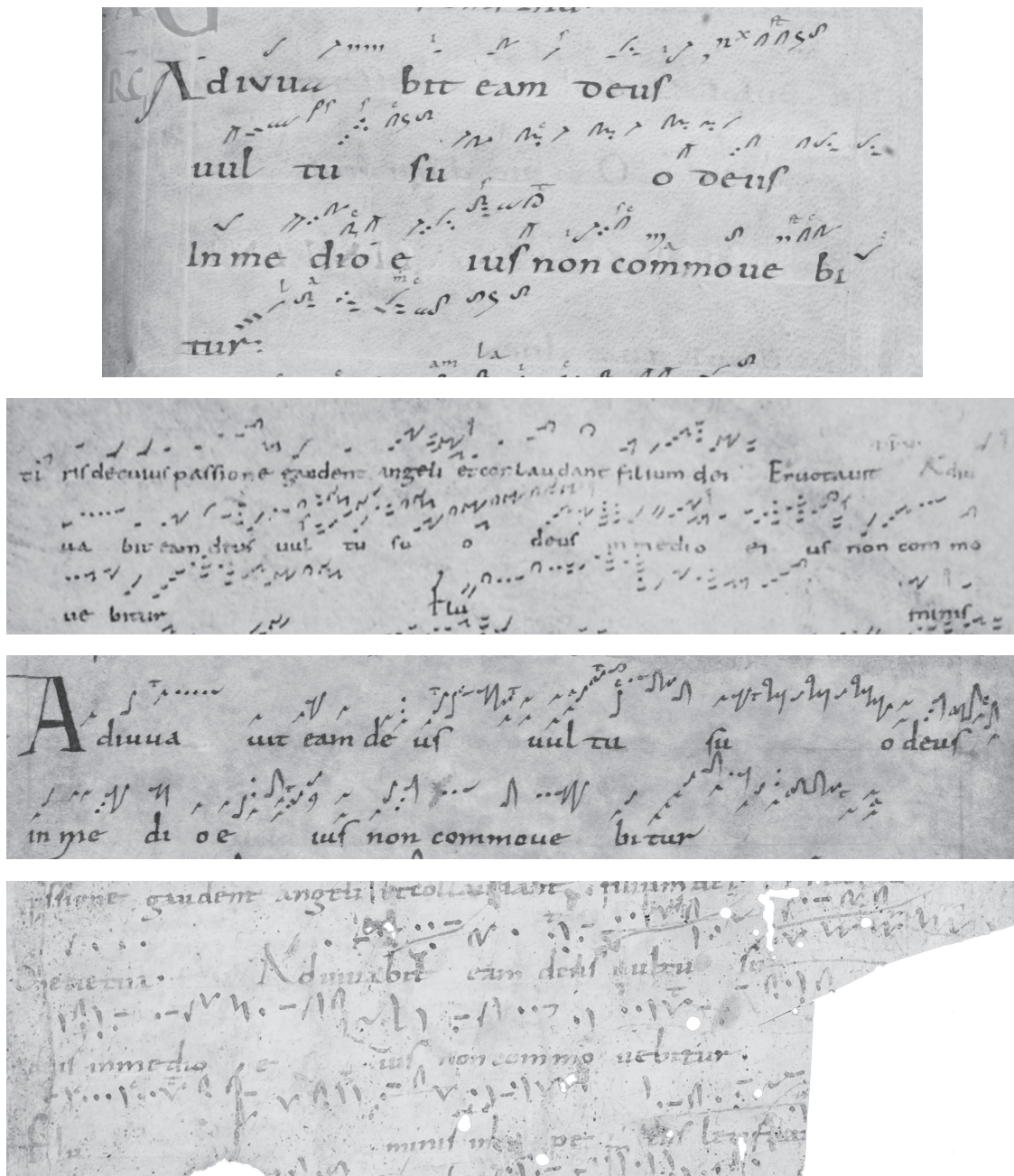
Figure 18 The opening of the Gradual *Adiuuabit* in: Sankt Gallen, Stiftsbibliothek Cod. Sang. 359, p. 55; Chartres, Bibliothèque municipale ms 47, fol. 12r (now destroyed); Laon, Bibliothèque municipale 239, fol. 14v; Wolfenbüttel, Herzog August Bibliothek Cod. Guelf. 476 Helmst., front endleaf recto.

Example 10 Passage from *Alleluia V. Dominus regnauit*
(S p. 39, Le fol. 36v, C fol. 53v, La fol. 84r, GN 26).

signs in each of these notations shows the first three notes in a group, then two notes, and then a closing group written with a special sign ('*quilisma*'). At the beginning of the verse, the syllable *Dominus* is linked with signs that match nine separate notes in the pitched version. Again the neumes are arranged in clear groups, corresponding to five and then four notes. This consensus about division of the melodic segment into two groups of notes matches affinities of graphic approach to representing those separate groups. In the first group, the first trace in all four notations is a curved or angled rising stroke: then follows a long stroke or single point followed by two further short marks, falling down, vertically or diagonally. The next group of notes is represented by a sign written as a continuous stroke in three of the four notations. Over the second syllable, *Dominus*, three of the four notations have two separate strokes, each either written as a trace that moves up, around an upper curve and then down, or written as a stroke moving to the right and then angled downwards (2 + 2 notes in the pitched version). The one notation in which the form is different (La) has the angled shape (like C) for its first neume, and then two separate strokes (2 + 1 + 1 notes). Finally, for the last syllable, *Dominus*, each notation has one short horizontal stroke. Even though it would have been possible to write forms to represent all the notes sung to a syllable in continuous strokes, these series of notes have been broken down into shorter groups, and within those groups into specific forms, indicating the significance (whatever the meaning) of this kind of information. Plainly, scribes could choose where to indicate divisions within the notes for one syllable, and further how, within the smaller groups these created, notes should be articulated (whatever those articulations indicate).

In terms of the visual image created by series of neumes, four notations for the opening phrase of the Gradual *In deo sperauit* (Example 11) simply look similar. While close

Example 11 The Gradual responsory *In deo sperauit* (S p. 78, M fol. 84r, C fol. 22v, La fol. 33v, GT 311).

In de- o spe-ra- uit cor me- um et a- diu-tus sum et re-flo- ru- it ca-ro me-a

et ex uo-lun-ta- te me-a con-fi-te- bor il- li.

inspection will reveal numerous differences of greater or lesser detail, the flow of signs from the beginning displays marked graphic resemblances, from points or short strokes, through neumes for rising groups mixed with points, to neumes over _cor_ that have several changes of direction ending in a diagonal upward stroke, and then on _meum_ two groups of three strokes composed mostly of points (and so on). The four manuscripts from which these notations come were written in four distant locations: Laon 239 probably at Laon in the last quarter of the ninth century (La); Chartres 47 somewhere in western/central France circa 900 (C); Milan D 84 inf. at the abbey of Bobbio circa 900 (M); and CSG 359 in the late ninth century

or circa 900, at the abbey of Sankt Gallen (S). The two other manuscripts represented in Examples 9 and 10 do not alter this impression of geographical separation: Leipzig Rep I. 93 (Le) was written in Metz or Trier (or that area) in the early tenth century,[4] while the fragment now in Wolfenbüttel cannot be localized, beyond (probably) 'north East Frankish' (W).[5] In terms of modern designations of neume types, these manuscripts have notations written in several different scripts: in the Laon manuscript 'Lotharingian', in the Chartres manuscript 'Breton', and in the Wolfenbüttel fragment, 'Palaeofrankish'. The other notations are all in 'Frankish' script, the Leipzig manuscript written in West Francia, the missal from Bobbio written in Italy and the Sankt Gallen cantatorium written in East Francia.[6]

Such comparisons demonstrate in an immediately tangible way the kinship of ways of writing signs for musical sound available circa 900: at a fundamental level there is a direct correspondence between these apparently different musical scripts, a sharing of ways in which the musical signs are set out in relation to a text, a sharing of the cognitive sense of physical placement in the space over the text, a sharing of graphic strategies (points, short straight strokes, and strokes tracing short lines and curves), often also a sharing of distinctive graphic forms, and finally, a pronounced interest in separating neumes for long series of notes over individual syllables into clear groups. At the very least an individual neume form in one notation may correspond to a fairly similar form in another, even if that similarity does not always extend across all the notations copied out here, while the procedures followed to group and separate notes are often in agreement. That is, if ninth-century notations are considered not through the relation of single abstracted forms set out in neume tables, but through extant examples of notations for specific chants, the basic historical fact of their graphic relation is instantly apparent. It is worth insisting on this: in graphic terms, these regionally defined notations have a much higher degree of similarity than of difference.

These are conspicuous connections. This sharing of fundamental procedures between different types of early scripts for representing musical sounds stands in contrast to writing systems for language. Many different ways of using written symbols to represents units of sound and meaning in systematic fashion have been devised since writing was first invented in the fourth

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[4] Michel Huglo suggested 'between Aachen and Trier': see *Les Tonaires. Inventaire, analyse, comparaison*, Publications de la Société Française de musicologie 3 sér, II (Paris: Heugel, 1971), 74–7; Michael Bernhard linked the manuscript with Metz: see *Studien zur Epistola de armonica institutione des Regino von Prüm*, VMK 5 (1979), 14–15; Hartmut Hoffmann set the manuscript within the direct orbit of St Maximin of Trier: see *Buchkunst*, I, 447. Hoffmann links this manuscript with a group copied in the first third of the tenth century, 'or even at the end of the ninth century'; although not listed in Bischoff's *Katalog*, notes in his *Nachlass* suggest his strong sense that it belonged close to the 900 cut-off point.

[5] The fragments were listed as possibly written at Corvey by Hoffmann, *Buchkunst*, I, 129; Arlt follows Hoffmann in suggesting Gandersheim as another possibility; see Wulf Arlt, 'XI.36: Fragmente eines Graduale mit "paläofränkischen" Neumen', in Christoph Stiegemann and Matthias Wenhoff (eds.), *799: Kunst und Kultur der Karolingerzeit*, 3 vols. (Mainz, 1999), II, 841–2.

[6] I use here the designations followed and argued for in Chapter 3.

century BCE.[7] Leaving aside the pictographic systems that most anthropologists do not now classify as language writing, these types are often named as logographic systems, syllabaries and segmental scripts (including abjads, abugidas and alphabetic systems);[8] to these may be added numerical notation and the tactile method of reading represented by braille. A writing system whereby the sound of a word can be expressed by one sign is evidently quite different from one whereby sounds are encoded in a series of separate signs; likewise an abjad, with consonants and without vowels, conveys sound in a way entirely different from an alphabetic writing system. Albeit entirely non-historical, this typology gives some sense of the considerable diversity of writing systems. The older evolutionary view of the development of writing, following the monogenetic principle that 'true writing originated only once', has been roundly rejected in studies of writing in the last thirty years:[9] the variety of ways of expressing language in script discovered in artefacts from Mesopotamia, Egypt, China and Mesoamerica is not generally considered as 'reducible to any underlying unity',[10] leading to the unavoidable conclusion that these writing systems were independently invented in different places and times across the globe. Indeed, at least three independent ancient origins of writing can be isolated (Sumerian, Chinese and Mayan).[11] Although discussion of monogenesis v. multiple genesis marks much of the study of early writing systems, it is now treated less as a binary frame of reference, and more as a background against which cultural studies of writing can be measured.[12]

The fundamental differences between these various writing systems can be explained through their independent invention, the different functions for which they were created, and the tools and surfaces used for their inscription. The wedge-shaped signs of proto-cuneiform result from the marking of clay tablets using a blunt reed as stylus; the inscriptions made with a stylus on bone or tortoiseshell in Shang China in the second century BCE may take their shapes from characters written with a brush on wood or bamboo.[13]

Juxtaposed to that much more wide-ranging background, the short time period during which systems for representing musical sounds in writing appeared in the relatively confined

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[7] The bibliography of the history of writing is extensive: for useful starting points, see Peter T. Daniels and William Bright (eds.), *The World's Writing Systems* (New York: Oxford University Press, 1996); Stephen D. Houston (ed.), *The First Writing: Script Invention as History and Process* (Cambridge University Press, 2004); and David R. Olson and Nancy Torrance (eds.), *The Cambridge Handbook of Literacy* (Cambridge University Press, 2009), especially Stephen Chrisomalis, 'The Origins and Co-Evolution of Literacy and Numeracy', 59–74.

[8] See Peter T. Daniels, 'The Study of Writing Systems', in Daniels and Bright (eds.), *The World's Writing Systems*, 1–17, 3ff.

[9] This was the view propounded by Ignace J. Gelb in *A Study of Writing: The Foundations of Grammatology* (London: Routledge, 1952). For the case against, see, for example, Daniels, 'The Study of Writing Systems', 8ff.

[10] Daniels, 'The Study of Writing Systems', 2.

[11] Peter T. Daniels, 'Grammatology', in Olson and Torrance (eds.), *The Cambridge Handbook of Literacy*, 25–45, at 36.

[12] See especially Houston, 'Overture to *The First Writing*', in his *The First Writing*, 3–15.

[13] On early Chinese writing, see especially Qiu Xigui, *Chinese Writing*, trans. Gilbert Louis Mattos and Jerry Norman (Berkeley, CA: Society for the Study of Early China and the Institute of East Asian Studies, University of California, 2000).

geographical area of Western Europe is surely critical. These systems were associated with a shared system for writing Latin prose text (in long lines, across the page from left to right, working down the page), and devised in order to show the musical delivery of texts that could be broken up into parts (letters, syllables, words, phrases) in ways explained by grammarians and generally well understood. Seen from a wider perspective, the sharing by these early scripts for music of key procedures – the treatment of melodic sound as a series of discrete movements strung together, the demonstration of pitch variation, and an arrangement on the page determined by the link between text syllables and melodic sounds – is unsurprising. Most significantly, the fact that the relationship between music scripts written in the late ninth and early tenth centuries is demonstrable not only on the conceptual level but also graphically argues for the direct historical association of these forms of writing. Were the relationship verifiable only at the level of procedures, then it could be claimed that these ways of writing musical sound had been independently invented, within a shared culture – the outcome of shared mentalities, education and ways of thinking about script. Since the sharing of graphic forms among these notations can be seen, however (and this not just when isolated signs are abstracted from usage and compared, but, over and above this, when signs are read across all or some of the notations at specific points in the unfolding of individual melodies), a common ancestry for these ways of writing becomes more obvious. This is not the same as claiming that there is a direct relationship in the transmission of actual notations for individual pieces – or to say it more concretely, that notations for parts of the repertory of Gregorian chant are copied from one another, across script families. To demonstrate or disprove that would require different kinds of argument. Here, it is the use of similar graphic forms for similar purposes that matters. This depends on, and can be demonstrated through, the congruence of Gregorian melodies: if the written signs are placed at the same point in the unfolding of a melody, it is likely that they perform the same role. Further, if those signs look similar, then the scripts to which they belong may be related.

Such foundational relations – very marked if viewed from the perspective of writing systems in general – seem to have been challenged by Hucke and Treitler, who were both more conscious of the differences between regional scripts used to write the earliest examples of neumatic notations than of similarities. Hucke argued that in the oldest witnesses of neumatic notation we are confronted by 'different neume scripts' rather than 'one script'.[14] The assertion is certainly correct in its own terms, but it seems not to look beyond the extant material to what might have gone immediately before. In a study in which the pre-history of what we can see in extant manuscripts was clearly of interest, Leo Treitler spoke of 'the appearance virtually all at once of notations of fundamentally disparate types and purposes';[15] the force of his statement was directed at setting aside older views of early notations, and arguing that neumatic notational systems were 'invented during the Carolingian period' rather than resulting from 'a long evolution whose earlier traces have

[14] Hucke, 'Die Anfänge der abendländischen Notenschrift', 275.
[15] Treitler, 'Reading and Singing', 372.

disappeared'.[16] Nevertheless, the implication that regional scripts were separately created, stimulated through 'reflection into the musical realm of the new scriptural orientation in the culture',[17] is hard to ignore. Earlier, Corbin had been mindful of another possibility, writing in her early work about a prototype that 'was reproduced in different regions in different ways'.[18] This suggests that she felt that there *was* a direct relationship between extant script systems, even though she could only see distinctly different, regional, scripts. Neither the prototype ('about which we know nothing')[19] nor stages in the transition from this to regional scripts were visually apparent to her in the notations with which she was familiar.

The starting point for considering the origins and development of musical scripts in the ninth century must be the spatial and graphic kinship of those scripts that can be observed in extant ninth-century examples – without making any claims about specific sign forms. If that kinship is so strong, however, then how, why and when did earlier ways of writing notations change to become different? What actually happened between a hypothesized early stage of writing musical signs and the series of regional notations that appear in sources of the last quarter of the ninth century and the early tenth? What motivated those changes? If we agree that there was something shared at some earlier point, but that, by the end of the ninth century, scribes in different parts of West and East Francia, northern Italy and northern Spain had developed the graphic possibilities of points, dashes and 'squiggles' in a variety of different ways, producing recognizably distinct scripts, then the interesting questions are those that explore the moments and modes of divergence, and beyond this the reasons for change. Finding answers to these questions will depend on being able to delve behind the scripts of circa 900, and on finding methodologies that will allow that archaeological analysis.

4.2 CATEGORIES OF DIFFERENCE BETWEEN SCRIPTS

In order to be able to think about ways of exploring the early development of scripts, the nature of the differences between regional scripts needs to be more precisely identified. As a starting point for this, the notations for one chant in four manuscripts will be compared. At this stage the goal is not detailed evaluation of the characteristics of each individual scribe's work, but identification of the general classes of difference between them.

In Example 11, four notations for the Gradual responsory *In deo sperauit* are written out over a pitched version based on the reconstructions available in the *Graduale Triplex* and the *Graduale Novum.* This is a highly stable melody, drawn from the closely networked melodic

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[16] *Ibid.*
[17] *Ibid.*
[18] Corbin, 'Les notations neumatiques', 228.
[19] *Ibid.*

family of fifth-mode graduals: the pitched versions notated in the eleventh century differ very little.[20] In terms of numbers of notes notated, there are two significant differences between the neumatic notations, also reflected in later pitched versions: at *et adiutus* and *confitebor* some notations have one note fewer than others. Both these variants are cases of a widely recognized manner of variation in the transmission of Gregorian melodies, the so-called '*initio debilis*' – a tendency to shorten an intonation through the loss of a 'weak' note at the beginning.[21] In *In deo speravit* the neumes for *et adiutus* in S and M show three notes (corresponding to **FE** in the version on lines, but adding a note, probably **D**, before), while C and La have just two notes (corresponding to **FE**). Likewise for *confitebor* S has two notes (**G b**), the second shown as liquescent (represented by the short turned end of the upward element), while M and La have only one note, also liquescent (on **b**); C has this one note, and does not mark liquescence. Otherwise these four neumatic notations follow similar melodic patterns throughout the responsory. Although it is quite impossible to know in what tonal fashion and with what precision intervals in these melodies were being sung in the ninth century, the pitched version can be used as a point of reference for melodic direction.

The first class of difference between these notations becomes evident at the very beginning of the chant: the space above the words is being used differently in relation to the pitch level of the sound. Where in C and La there is a noticeable movement from a lower to a slightly higher vertical level between *In* and *deo*, in S and M there is no movement of the neumes upwards: the level at which the first neume of *deo* is begun is just the same as that for the preceding neume. In the latter two notations information about movement to a higher pitch level has been encoded in the signs themselves, rather than demonstrated through their placement on the page: the upward stroke indicates a higher pitch than the preceding short horizontal point (or dash).

This same category of difference can be seen at *caro mea*. Here S, M and C all have a series of neumes in the forms point–line–point, each neume written on or beginning from the same level on the page; in contrast the scribe of La wrote three identical forms, but set the second neume higher, moving down again for the third. Staying with the placing of neumes on the page, but looking now at longer groups of neumes over single syllables, the passages over *sum* and *mea* again show different exploitation of the space above the words. On *sum* the signs written in S and M rise in an upwards diagonal direction, the element at the beginning of each neume group starting at the same level at which the previous one stopped. This rise on the page through the melisma is in contrast to the pitches of the notes

[20] See the remarks in Stephan Zippe (ed.), 'Vorschläge zur Restitution von Melodien des Graduale Romanum. Teil 21', *BG* 43 (2007), 11–13. There is only one point at which there is disagreement between pitched versions about intervallic relations: on the sixth note of the melody over *caro mea*, some scribes write an **E**, others an **F**.

[21] On this phenomenon, see esp. Herminio Gonzáles Barrionuevo, 'Das Phänomen "INITIO DEBILIS" und seine Wiedergabe in der Neumenschrift', *BG* 26 (1998), 35–62.

represented: the eleven-note series for this one-syllable word ends on the same pitch at which it had begun. The same passage is written out by the scribe of La in such a way as to allow closer representation through placement of individual neumes: in no way can his notation be described as intervallically precise, but the disposition of neumes in the space over the text keeps the highest notes at a level above the rest, and the lowest notes at a level below the rest. Finally, the scribe of C used both techniques: at the beginning of the chant he followed the same practice as the scribe of La, but at *sum* his neumes follow a rising diagonal direction, as in S and M. A final example deals with the disposition of neumes within a short group, over *uoluntate mea*. Here a group of three notes on one pitch is followed by a lower group in the sequence low–high–low. In both S and M, signs for the three notes on one pitch are written as short commas, followed by an extended form for the three lower notes; in this neume the pen was pulled across, then up, and then across again, more angled in S, more curved in M. In both notations this last neume was begun at the same level as those immediately preceding, despite the implication of the pitched versions that it should begin (and end) a third below the repeated notes. In both C and La the repeated notes are written as two dots and a longer curved dash, and then followed by an extended form for the three lower notes. In both these cases the longer neume was begun *below* the level of the repeated notes, in some way representing the fall in pitch at that point. These were quite different techniques for the arrangement of signs within the space between text lines.[22]

A second class of difference between the four notations is the use of signs with different graphic characteristics at the same point in the chant melody. If written at the same point, there is a strong likelihood that signs have similar meanings, although it is certainly not always so. In the neumes over *refloruit* for example, all four notations have related forms: a stroke that rises and then falls. It is the way in which the turn is made (curved or angled), and the inclination at which the pen is moved up and down the page that vary: in S the descending stroke ends almost parallel to the ascending stroke (and has 'c' written above), whereas in M the upward and downward elements make a larger angle; in C, which has the sharpest turn between ascending and descending elements, the two parts of the stroke are virtually at right angles to each other, and in La a short curved trace is continued in a longer descending line. In contrast, at *meum*, where two of the four notations have the same form as at *refloruit* (M, C), the La scribe wrote two separate strokes, and the scribe of S wrote the same form as later for *refloruit*, but with a line across the top. In these two situations, leaving aside S's extra 'c' and added stroke, the basic 'up and down' form is repeated in each of the three notations, whereas La provides two possibilities. The forms of neumes written for a group of two falling notes in this responsory melody, either for a syllable or within a melisma,[23] are set out in Example 12. Even through this limited comparison, it is possible

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[22] On these techniques see Rankin, 'On the Treatment of Pitch'.
[23] I include here only those moments when the grouping of notes is agreed across all four versions, thus not examples where division of note groups within melismas differs.

Example 12 Signs for two falling notes in the Gradual *In deo sperauit* (S, M, C, La).

to see that any analysis of relationships across scripts will have to recognize simultaneously that differences may be purely graphic, or may involve meaning as well. Reading across the neumes in M, for example, it seems that only one form is being written, even if with a small but noticeable degree of graphic difference (of inclination, and the length of the downward element); in contrast to this, the neumes in S consist of the basic form (*sum* 1), the basic form with a 'c' above (*refloruit, illi*), and the basic form with a short stroke across the top (*meum, sum* 2, *mea*). That this variety among the forms in S is indeed meaningful is underlined by concordance with two different procedures in La: where in S the basic form has a short stroke across the top, the La scribe wrote two separate neumes, but where in S the basic sign is unmarked, or has 'c' above, the scribe of La wrote one neume. Finally, in C, on five out of six occasions the scribe wrote one form, although with variation more pronounced than in M; in the sixth case he wrote two separate neumes, as in La. Here we find both change of meaning and graphic variation.

When pairs of scripts rather than all four are compared, the degree to which graphic discipline could impact on the way a neume was written stands out even more clearly. The consistency of the S scribe in shaping a form for two falling notes, compared to some inconsistency on the part of the M scribe writing the same form, has already been noted. In the ways in which individual neumes are formed, the notations in S and M usually exhibit very similar graphic choices but different manners of execution: in Example 11 at *et adiutus*, for example, the neume in M is written with two curves, but in a vertically compressed shape, while the neume in S has a more extended shape. Such differences are even more noticeable between the other pair of notations: where the scribe of C writes a simple shape for two rising notes (*sperauit*), the scribe of La writes a neume that has the same basic form (a short horizontal and a longer vertical element), but finishes with a turn at the end of the upward movement. Likewise a neume for two descending notes is drawn by the La scribe in a more distinctively shaped fashion than that written by the scribe of C: in the La neume, the pen traces an upward curve (as opposed to a line), before being pulled down vertically. In this class of difference we can therefore observe variations within the writing of graphically similar signs, variations that encompass spectrums of both form and discipline: under the first heading could be set a range of relations from extremely similar, but with a slight

difference of inclination or length of individual elements of the neume to evidently related forms, with more pronounced differences in the execution; under the second heading could be set relations between forms written with more or less graphic consistency in individual scripts, allowing greater or lesser development of meaning.

When considering this category of difference, it is also important to notice the presence in these notations of neume shapes that appear identical, but which are written at different points in the notations, thus potentially with different meanings. A neume written with a lower curve extended upwards to the right (as over *sperauit* in S and M, Example 11) may look similar to the neume written in C and La at *adiutus*; likewise the angled shape of the neume written at *et refloruit* in S and M may look similar (discounting the liquescent rounding at the top) to the angled shapes written in C and La at *deo* and *sperauit*. Undoubtedly, these are closely related movements of the pen, but a lack of coincidence of meaning is suggested by their different deployment in the flow of the melody. Such cases will be examined in more detail shortly: for now, it is enough to see that specific graphic shapes may have acquired different meanings in different scripts. Either these neumes were independently invented with different meanings, or, somewhere in the background to these notations, a scribe has changed the use of a sign, with clear consequences as the repertory of signs in different scripts became more differentiated and stable.

Finally, a third class of difference – to some extent indivisible from the second – encompasses the greater exploitation in the work of some scribes of detailed indications for performance, beyond the choice of a particular neume, its placement above the words, and the grouping of neumes in melismas. Between the notations in S and M there are fewer differences of graphic detail when writing the same forms (although each scribe wrote with distinctive axes for up and down strokes): the dissimilarities that there are between the work of these two scribes are much more to do with additional detail. Examples include the added strokes on a neume for two falling notes in the S notation, as noted above: such additions are relatively rare in M. (The added stroke, named by Mocquereau as an *episema*,[24] indicates a lengthening or emphasis of the notes represented by the neume.)[25] Likewise, within the melisma for *sum*, the fifth and sixth notes are shown in both notations in a shape that rises and then falls; in the M notation this is the same form as was written on other occasions for two falling notes. Here the S scribe modified his usual form in two ways, by writing 'c' above, and by writing two extra strokes at the end – first extending the downward element with a short turn to the right, and then adding a little stroke across this. (The letter 'c' stands for *celeriter*, indicating that the first note in the two-note descent should be sung fast.)[26] As in the case of the stroke over

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[24] The name 'épisème romanien' appears in Mocquereau's preface to *PM* 4, 17ff.
[25] See Cardine, 'Sémiologie grégorienne', 11–13.
[26] See Notker, 'L'épître', ed. Froger; also Smits van Waesberghe, *Verklaring*.

me<u>um</u>, the very last short stroke indicates that the second note represented by the neume should be lengthened or emphasized. That only the second of the two falling notes is intended here is clarified in two ways, first by the difference between the sign as written over *sum* and as written over *me<u>um</u>*, and second, by the 'c', demanding that the first note be sung fast. The same technique of adding a short stroke can be found in many graphic situations in the notations in Sankt Gallen manuscripts: here, in the neumes over *uoluntate me<u>a</u>*, such a stroke has been added to the third 'comma'. At this point the scribe of M wrote three simple commas, without qualification. That these kinds of indication were an established habit of this Sankt Gallen scribe, and equally not the concern of the scribe of M, is clear from their omnipresence in the one manuscript and general absence from the other. On many occasions the scribe of S added letters and strokes, advising the reader about the treatment of short melodic passages, over and above the pattern of pitches attached to a single syllable.

The scribe of La also used many such letters for clarification, and more often than the scribe of C. In this responsory, the C scribe's use of letters is restricted to 'q' for 'equaliter', indicating that the next note should be sung at the same pitch as the one preceding (between *sum* and *et*, and in the middle of *illi*). This scribe used the letter technique as a pitch corrective, usually when the point he had reached on the page was too high up in the space between text lines; between *sum* and *refloruit* he needed to move his pen down to a lower level, but equally he wanted to make it clear that *et refloruit* should begin at the same pitch as the end of *sum*. The scribe of La wrote the letters 't', 'c' and 'n', all qualifying the rhythmic/ accentual treatment of individual notes (*tenere, celeriter, naturaliter*).

Yet the possibility of adding further layers of information to neumes that showed the relation between melodic phrases and individual syllables, and the number of notes per syllable, was often handled by the scribe of La in a different way. His approach to incorporating detail about the delivery of a melody did not always involve the addition of extra strokes or letters, but rather the use of signs in distinctive and contrasted ways. The treatment of situations in which a group of two falling notes are to be represented presents the clearest example of this technique in *In deo sperauit*. For two falling notes, this scribe wrote one neume, made in a continuous stroke, on four occasions, and two separated strokes on the other three (Example 12). All these signs present the same melodic information (two descending notes), but look visually different. Each of the two separate strokes indicates a single note, thus writing the two together indicates the same pitch pattern as the across and down single stroke, but some different form of treatment of those notes. Each time the scribe of La wrote separated forms for two single notes, the S scribe wrote a neume including an added stroke: the clear implication is that the separation of strokes by the scribe of La indicates lengthening or emphasis, using a different graphic technique from that known at Sankt Gallen. In other words, the division (or separateness) and, by extension, the joining (or continuity) of graphs, has itself become a way of representing meaning in the notation of La. As a writing technique this sits beyond the contrast of different forms for the same melodic

movement. The procedure of writing continuous or separated graphs is extremely promi-
nent in the work of the scribe of La: it is also present in the notation of C, as here at _mea_, but
is exploited less often.

This last category of difference must depend not only on a scriptorium discipline – if the
scribe concerned is working within a community that has a sustained writing practice – but
also on the abilities and interests of individual scribes: some will have been more concerned
and able to record detail over and above the number of notes for each syllable, and
information about melodic direction, while some will not.[27] Further, the capacity to
incorporate detail seems to have been more developed in some script types than in others,
and in different ways.

All these categories of difference between scripts may offer paths for the historian to isolate
individual moments of change between ways of writing, as long as these 'moments of change'
can be correctly identified; but they are inextricably bound up with each other, and may easily
produce confusion. Nevertheless, the establishment of an overall picture of the kinds of
difference between notations written circa 900 richly demonstrates the extent of development
of graphic possibilities that had already taken place. It should be possible to interrogate reasons
for change more closely: for now it is sufficient to observe that differences between scripts can
largely be described as purely graphic or as concerned with meaning as well. At the point at
which we see these scripts – already well established and widely written – many scribes had
already worked out the potential of what they saw in exemplars in a variety of fashions,
making changes according to those qualities of sound they wanted to show in writing, how
their signs would be read by users and how their writing would look on the page.

4.3 MODELS FOR THE RELATION BETWEEN EXTANT MUSIC SCRIPTS

That there was a shared fundamental attitude to the way in which a fabric of sound could be
apprehended and broken down into parts, some of which could then be reflected in visual
signs, has been implied in discussions of relations between regional scripts, even if not
universally agreed. In a review of publications on Palaeofrankish notations by Handschin
and Jammers, Jacques Hourlier and Michel Huglo presented a model that seems to leave no
doubt as to their view (see Figure 19).[28]

This diagram seems intended to indicate both the simple fact of direct graphical relations
between script systems and certain associations between script types; as these Solesmes
monks wrote, 'the study of the earliest notated manuscripts allows us to link their notations
to an earlier phase'.[29] Their starting point for sorting script types was based on the old

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[27] On the variable use of the _episema_ by scribes of Sankt Gallen in the making of one book in the first half of
the tenth century, see Rankin, 'Ways of Telling Stories', 383–5.

[28] Hourlier and Huglo, 'Notation paléofranque', 218.

[29] _Ibid._: 'l'étude des plus anciens manuscrits notés permet de relier les notations à cette phase antérieure'.
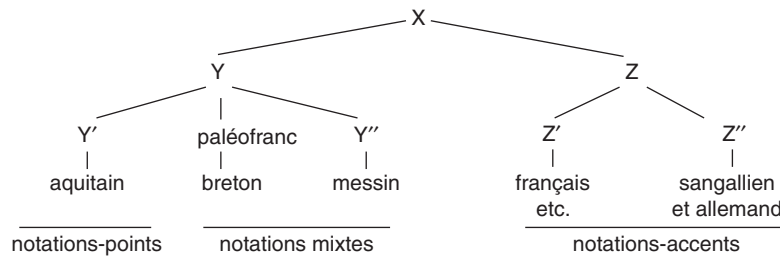
Figure 19 Diagram of relations between scripts by Hourlier and Huglo.

Solesmes paradigm of two kinds of invention based on the simplest graphs, 'notations-accents' and 'notations-points', which necessarily engendered the further category 'notations mixtes'.[30] This was a theory of origins that had its basis in the idea of two graphic marks, the accent and the point, each giving rise to a distinct system for representing sound in writing. Since it is difficult to maintain this theory of origins in the face of the surviving materials, there is an inherent problem in the diagram. Further, Hourlier and Huglo's use of the stemma diagram as a procedure for modelling relations may not have been directly based on their perceptions of the relations between scripts, so much as the more usual textual application of a stemma in philological work. For they argued that it was the 'desire to diffuse the Gregorian repertory' that prompted the invention of notation, 'fixing cheir-onomy on parchment', and that the distinctions between writing systems resulted from the probable involvement of several scriptoria in this task and their connections with each other.[31]

These were not the only scholars to entangle the modes of development of script types with the transmission of Gregorian chant: within this review, they had already noted Jammers's hypothesis linking two notations (i.e. scripts) with two types of chant. In 1953 he had proposed that 'point neumes' derived from prosodic signs were associated with Gallican chant and that 'accent neumes' were linked with Gregorian-Roman chant.[32] But in this same decade another, entirely opposed, view began to influence scholarly discussion: in her earliest study of neumatic notations Solange Corbin had pointed to the brevity of many of the earliest examples of neumatic notation, contending that there was no extant instance of a book made before the tenth century that was especially designed to be notated.[33] This

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[30] On the background to accent and point neumes, see above, pp. 26–33, and on how these categories may be rethought, see below, pp. 305–12.

[31] 'Notation paléofranque', 218: 'le désir de diffuser le répertoire grégorien aura provoqué le besoin d'une notation, fixant la chironomie sur le parchemin . . . très vraisemblablement plusieurs centres ont contribué à cette tâche : il a existé plusieurs scriptorium et des relations de l'un à l'autre . . . A partir de . . . ces notations primitives s'est accomplie la distinction des écritures.'

[32] Jammers, 'Die palaeofraenkische Neumenschrift', 243ff.

[33] 'Il n'existe pas, jusqu'au Xᵉ siècle, de livres specialement écrits pour reçevoir une notation.' Corbin, 'Les notations neumatiques', 227.

carefully stated suspicion of the association between Gregorian chant and early music scripts was further supported by her concluding remark 'that we neither understand the exact origin of neumatic notations, nor sometimes even the detail of their geographical distribution, and therefore the immediate cause of this diffusion'.[34] By 1965, having himself carried out more extensive palaeographical study and had access to the doctoral thesis written by Corbin, Jammers's ideas on the origin of neumes were somewhat changed: on the basis of Corbin's diplomatic formulations, Jammers now thought that most of the earliest examples of neumatic notation were in books made for the priest or deacon, while many fewer examples of ninth-century notations of chants sung by the cantor and schola had been identified.[35] This did not cause him to abandon the theory of two separate origins and courses of development for neumatic scripts, however; this he now set out in a complicated model of relations between early neumatic scripts.[36]

The issue of the relation between the origin and development of neumatic scripts, on the one hand, and the transmission of Gregorian chant, on the other, was not yet resolved, and in the later twentieth century these intertwined subjects became the basis for two further models of the relation between scripts. On the side of the argument that had suggested or more firmly asserted that different scripts might have emerged contemporaneously, and, at the beginning, without direct graphic relations – as proposed by Corbin and later taken up by Hucke and Treitler (who allowed the possibility without making any of his arguments depend on it) – there was nothing to model, of course.[37] On the side of a close association between the transmission of Gregorian chant and the use of notation, both Stäblein and Levy presented diagrams to illustrate their hypotheses; both have the basic form of a stemma, laid out according to a rough chronology.[38]

Stäblein's diagram is the most purely pragmatic of the four, in the sense that it is directly based on palaeographical study of extant material.[39] This presents a theory of origins that is left unresolved: while Palaeofrankish script now appears as the earliest named script type, it is set in parallel to two other lines of descent headed by question marks. After this Stäblein gave Breton script a formative role – another new hypothesis[40] – and then set the 'zentraleuropäische Familie' of Spanish, central French, Insular, Italian and German neumatic scripts as a linked series of regional scripts; these are the scripts I have named 'Frankish' here. Finally he located the other two regional scripts, Aquitanian and Lotharingian, as also derived from the Palaeofrankish/Breton base, but outside the 'zentraleuropäische

[34] 'nous ne connaissons ni l'origine exacte des notations, ni, parfois, le détail de leur répartition, et, par consequent, la cause immédiate de cette répartition'. *Ibid.*, 232.

[35] Jammers, *Tafeln*; see also his 'Studien zu Neumenschriften'.

[36] Jammers, 'Studien zu Neumenschriften', 124; see above, p. 48.

[37] See above, pp. 172–73.

[38] See above, pp. 56–7.

[39] Stäblein, *Schriftbild*, 27 and 30.

[40] In 'Le domaine' (55), Huglo had stated that 'la notation bretonne semble dérivée de la notation paléofranque', but had not spoken of its relation to other music scripts.

Familie'. All this was set out in prose as well as in the diagram, but the nature of his study is such that there is little reasoned explanation of how he arrived at this scheme.[41] The evidence presented consists of (a) a statement about the importance of cheironomy and the claim that the Palaeofrankish script represents movements of the hand written onto parchment;[42] (b) some sense of the chronological primacy of the Palaeofrankish script (without explanation);[43] and (c) the closeness of some Breton neume forms to Palaeofrankish signs.[44] From his prose as well as the diagram, the direction of his own thoughts about origins – although coupled with uncertainty – becomes clear: 'one should also consider that the first beginnings of neume script, the Palaeofrankish . . . still represent a rudimentary little developed phase, which makes it difficult to assume that there was a previous long development'.[45]

The last such diagram to have appeared was presented by Levy in a study entitled 'On the Origin of Neumes': this owes much to Stäblein's views but is noticeably *not* based on palaeographical study.[46] Levy was creating a historical hypothesis about the need for and functions of notation at different periods of Carolingian rule: his diagram shows an early stage, when notation of a 'graphic type' (which he identifies as Palaeofrankish notation) was available, followed by a later stage, when notations of a 'gestural type' (corresponding to the regional scripts) were in use. He explains the change from the earlier to the later stage as having been prompted by the 'promulgation of the authoritative Frankish-Gregorian neumed antiphoner'.[47] Indeed, his diagram has the caption 'Gregorian propers: three-branch stemma' and is organized to show the chronology of the notation of Gregorian Proper chants in different neumatic scripts rather than the relation of those scripts. It was thus again more dependent on historical hypotheses than on palaeographical study of the notations themselves.

Although superficially comparable, these four models involving types of neumatic script had different aims and were based on different kinds of evidence. The earliest, by Hourlier and Huglo, was certainly based on palaeographical observations, but the starting point for

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[41] Stäblein, *Schriftbild*, 25–43, setting out the characteristics of the regional neume scripts. From the footnotes it is possible to understand that he had every intention of following this up with another study on 'Neumenkunde', in which he might have provided the kind of detail that could not be included in a relatively non-specialist study. But he died in 1978, three years after the *Schriftbild* was published.

[42] This was a widely held view: see, for example, Huglo, 'La chironomie médiévale'; but for an opposing view see Hucke, 'Die Cheironomie'.

[43] That is, beyond the presence in the Valenciennes manuscript of Aurelian's *Musica disciplina* of some Palaeofrankish neumes and his citation of Handschin's study, 'Eine alte Neumenschrift'.

[44] Stäblein described the Breton neumes as 'obviously' developed from the Palaeofrankish, mentioning also Michel Huglo's views ('Le domaine').

[45] 'Man möge auch bedenken, daß die ersten Anfänge der westeuropäischen Neumenschrift, die gleich zu nennende paläofränkische, noch ein derart rudimentäres, wenig entwickeltes Stadium repräsentieren, daß die Annahme einer vorausgehenden längeren Entwicklung schwerfällt.' Stäblein, *Schriftbild*, 28.

[46] Levy, 'On the Origin of Neumes', in his *Gregorian Chant*, with the diagram at 118.

[47] *Ibid.*, 129.

those observations was as much a theory about origins as about the observed development of neumatic scripts – even if it was based on detailed knowledge of those scripts. That theory of origins broke down quickly, once the nature and chronology of extant sources was brought into play. Jammers's diagram was also determined by a theory of origins, combined with a historical framework concerned with chant transmission (his separate Gallican and Roman chant repertories and scripts): situating notations within that historical framework had forced him to take a more extreme view of the relation between Aquitanian, Palaeofrankish, Breton and Lotharingian scripts, deriving the last three from the former. In a significant way, Levy's diagram was not really about the relation between regional scripts at all, beyond the separation between an early 'graphic' and a later 'gestural' type. Only Stäblein's diagram seems not to have been overdetermined by a theory of origin; indeed, that is the part of the scheme that he leaves most unresolved. Above all, none of the schemes set out in these diagrams has been able satisfactorily to chart the evident relations between extant examples of music scripts.

With these studies by highly qualified scholars in mind, the challenge of finding a way to reach behind the extant notations in extant sources becomes more sharply defined: if we want to discover more about the similarities and differences between scripts, then the method of comparison from one notation to another is of central importance. In as much as it is possible, the starting point for comparison should not be a preconceived historical position, but simply the surviving witnesses of practice.

The most serious challenge to these schemes lies not in the difficulties encountered in attempting to understand the relations between developed script types, however, but in the attempt to reconcile ideas about origins with developed script types in a genealogical manner.[48] For the stemma metaphor is too simplistic in its concreteness, using as its basic units of comparison sets of evidence (scripts) that are not easily made equivalent, and none of which can be demonstrated to be more than a fairly porous tissue of ideas and procedures. In terms of music scripts, whatever was being written in the early part of the ninth century must be understood to have had considerable fluidity, differentiating early script practices from the more disseminated and stable scripts seen in notations written at the end of the century.[49] The extent to which exchange of ideas between scribes will have been possible would have ensured a fairly chaotic progress from early manifestations of music script to these more fixed types. In the elaboration of ideas about how to represent musical sound in writing, some new steps will have been taken independently by scribes or groups of scribes, while others will represent reactions to ideas coming from another geographical or institutional location. If we pay attention to the third category of difference between extant scripts set out above – the greater exploitation in the work of some scribes of detailed indications –

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[48] On the problems of using a genealogical model in the study of ways of writing see Houston, *The First Writing*, 7ff.

[49] On the situation before the appearance of classicized or 'school' scripts, see Arlt, 'Anschaulichkeit', *passim*.

then we might perceive the motivation to work out 'ever greater specifications of sound and meaning'[50] as a significant generator of script development before 900. It should not be claimed that such a motivation was rare: the indications of particular ways of manipulating technical possibilities indicates quite the opposite.

How then can we explore the origins and early development of neumatic scripts between the time of their invention and the historical period when most can be found (circa 900)? Here I think we need to distinguish between methodologies for investigating the early history of musical signs, which must by definition proceed through graphic links (and lack of links) between scripts, and the way in which we understand and represent the similarities and differences that are uncovered. The crudeness of the stemma/genealogical representation can be straightforwardly avoided, but the search for cases and types of change depends on the juxtaposition and confrontation of scripts.

The study of language, and, specifically, historical linguistics, provides a vital hint for a possible approach to this confrontation of scripts. Etymology – the study of the history of words, their origins and how their form and meaning has changed over time and geography – has a tool for comparing words across different periods and regional boundaries in order to investigate the relation between languages: this is the idea of 'cognates', from Latin '*cognatus*', 'kindred, related, connected'. But it is the *nature* of the relation that is of most significance for the investigation of relationships between neumatic scripts: cognates are words that 'are derived from a single original form with a single original meaning'.[51] In other words, the quality of being cognate is expressed through two aspects of individual words, phonetic structure and meaning: when regularly recurring matches between the phonetic structures of basic words that have similar meanings in different languages (or dialects) can be demonstrated, those basic words are considered 'cognate'. The aspect of meaning is crucial, to the extent that linguistics has a term for those words that appear phonetically similar but lack a shared meaning: 'false cognates'. In considering the relation between languages, the next step is to gather more examples: in linguistic theory it is argued that 'a truly systematic correspondence' between cognates 'is unlikely to be accidental' and therefore a systematic correspondence of cognates 'can be attributed to a common descent'. Of course the methodologies of linguistics have been developed to deal with language, not with script, but the association on the basis of which a cognate relation can be established links meaning (that which is designated by a word) with ways of writing sound. In using this concept of 'cognate forms' in the examination of notation, the quality that is analogous to linguistic meaning is articulated sound, as the quality that is analogous to phonetic structure is graphic signs. It is therefore worthwhile exploring whether investigation of cognates

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[50] I borrow this description from Houston, *The First Writing*, 12.

[51] Terry Crowley and Claire Bowern, *An Introduction to Historical Linguistics* (4th rev. edn, Oxford University Press, 2010), 81.

represents a way forwards that will produce useful historical evidence about the relations between neumatic notations.

The idea of a recurring match between a way of writing and that which is designated by a word suggests a decisively different procedure for the comparison of music scripts: it is not simply the similarity of the written form that should be the point of departure, but that which is represented by those forms – the sound patterns that they are intended to convey. For it is the systematic correspondence of signs with similar meanings as well as ways of writing signs that is called into question. A useful starting point for investigation will be neumatic signs likely to have similar meaning. Yet, in musical terms, meaning – beyond a simple pitch pattern – may be hard to establish; if specific melodies written out in different scripts are compared, however, it is likely that signs placed in similar positions in relation to the individual text syllables will have similar meanings, at least much of the time even if not always (when they represent different readings or when some are more qualified in detail).[52] Then it does not matter whether or not the modern reader understands all the actual nuance of individual signs, so much as whether those signs are or are not intended to convey similar meanings, that is, whether the different scripts are notating the same or different sound events. That is why signs that are written at the same point in individual melodies, and which probably indicate the same or very similar sound patterns, have provided all the introductory examples for this chapter.

Of course, to anyone familiar with the work of Eugène Cardine, it may now appear that I am re-inventing the wheel: this methodology based on the linguistic concept of cognates turns out to be nothing other than a procedure for which the fundaments were laid down by Solesmes monks in their copying in parallel of many versions of a melody, and then developed by the semiological school of scholars inaugurated by Cardine and used throughout his study *Sémiologie grégorienne*. There are important differences of procedure and of goal, however: even if based on an unrivalled familiarity with neumatic notations, Cardine's examples do not build up large numbers to demonstrate or even to test systematic correspondence between scripts. Indeed, the correspondence of graphic forms in different notations is not the target of his examples at all: sometimes different notations are shown to have slightly different readings, but more often, they are shown as more or less nuanced than each other, or left without commentary, assuming similar meanings. The central aim of Cardine's semiology was to uncover the meaning of the signs, their full meaning expressed in sound, whereas in considering the relation between scripts I am looking through similarities of meaning to understand more about the history of musical scripts.

If melodic context can be used as a general guarantee of similar meaning, then the linguistic method for establishing a cognate relation can be used to move from meaning to ways of writing sounds: if signs set in similar contexts are written with similar forms,

[52] See above, pp. 173–79.

then those forms may be cognate, that is, there may be a historical relation between them. As a method, this is different from the highly abstracted collection of neume forms in tables that deal with broad categories of palaeographical identity and are always generalized across numbers of manuscripts. This difference can be illustrated with a simple example: the Breton and East Frankish scripts both share a form for writing two rising notes, written as a short horizontal line turned at a sharp angle to a rising stroke. The main differences between the ways of writing this form in Breton and East Frankish notations have to do with the inclinations of these two elements, usually more horizontal and perpendicular in Breton notations, and more inclined in East Frankish notations. Despite their similarity, however, these forms do not generally appear in notations of melodies in the same positions: in the Gradual *Benedictus qui uenit* (Example 13), for example, this form appears in the C notation for *Benedictus*, but not in the notation of S. It appears in the S notation at the beginning of the verse, *A domino*, but not in the C notation. That lack of correspondence is consistent, in this Gradual and in notations for other chants, indicating that the meaning of this form in the notation of C is not the same as its meaning in the notation of S, that is, this is *not* the same sign. Each time the form appears in one of these notations, the corresponding neume in the other notation is written differently: in linguistic terms, the similarity of these graphs is no guarantee of their cognate relation and their direct association would be an example of a 'false etymology'.[53]

Nevertheless, the forms written when the angled shape for two rising notes appears in one or other of these two manuscripts lead the reader into a complex of related but not directly cognate signs (see Example 14). In this Gradual, the scribes of S and C can each be seen writing a group of two rising notes on one syllable in two ways (*Benedictus, A domino*). At *Benedictus*, an angled shape in C corresponds to a shape with a lower curve extended in an upward stroke in S; at *A domino* the angled shape in S corresponds to a shape written in two separate strokes in C, with a short horizontal dash followed by a upward diagonal line. A shape with a lower curve extended in an upward stroke also appears in the C notation, at *illuxit*; here the scribe of S wrote a small curve, without upward elongation. This last example sits with the series of letters 'illuxit nobis' and thus appears to signal liquescence. Four graphic shapes are in use here: two shared by both scribes and two used only by one or other scribe.

That same set of correspondences can be demonstrated in many other notations for other melodies, compared across these two manuscripts: in a sample of one hundred instances of a simple upward motion at similar points in melodies for mass Proper chants, the correspondences set out in Example 15(a)–(i) were found, while fifty instances of liquescence

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[53] I note that the non-equivalence of these signs has been recognized since the publication of Chartres 47 as *PM* II in 1912: here the table comparing neumes in Sankt Gallen manuscripts Laon 239 and Chartres 47 sets them apart – as also in Corbin's *Die Neumen* and Stäblein's *Schriftbild*.
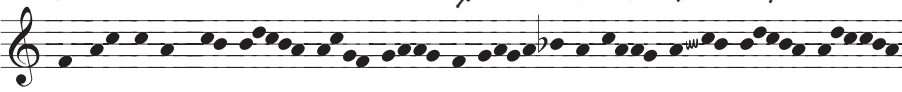
Example 13 The Gradual *Benedictus qui uenit* (S p. 39, M fol. 31v, C fol. 6r, La fol. 9r, GN 25).

Be-ne-dictus qui ue- nit in no- mi-ne do- mi- ni :

de- us do- mi- nus et il-lu-xit no-bis.

A do-mi-no

Example 14 Graphs for two rising notes in S and C.

Be<u>ne</u>dictus <u>A</u> domino   illu<u>xit</u>

S

C

Example 15 Corresponding graphs for two rising notes (100 cases) in S and C.

	C	S	
(a)			51
(b)			25
(c)			14
(d)			1
(e)			2
(f)			1
(g)			4
(h)			1
(i)			1

revealed the correspondences shown in Example 16(a)–(e). Both samples were made choosing melodic movements of two notes upward (or of an upwards liquescent movement) linked with one syllable rather than within a melismatic context.

In Example 15 the graphs from C listed under (b) and (c) are shown as if easily distinguishable; in fact, this is hardly the case, since this scribe's way of writing the lower part of the neume covers the whole spectrum from a simple dot to a clear dash, with the majority of graphs sitting between those two extremes. The common difficulty of distinguishing between these graphs may indicate that the scribe was not always attempting to

Example 16 Corresponding graph for a rising liquescence (50 cases) in S and C.

C   S

(a)   ⌣   ◡   36

(b)   ⌐ ⌐ ⌐ ⌐   ∫   10

(c)   ⌐   ∫   2

(d)   ⌐   ∫   1

(e)   ⌐   ∫   1

differentiate between them himself, and that they represent one writing procedure and one way of singing. Of the total of one hundred cases, eight have a graph that in one or other of the two notations integrates an *oriscus* sign ((d)–(g)), thus including information about the pitch relation between two successive notes (whether between the two notes in this group, as in (d), or between a preceding or succeeding note, as in the others): all these represent modifications of basic sign shapes. Setting these eight cases aside, a total of ninety out of one hundred cases show a stable correspondence between graphic shapes used by the two scribes ((a), (b), (c)), revealing an ordered approach on the part of each. There are only two examples where this consistency of relation is absent: in the case shown by (h), both scribes wrote an angled shape, and in the case shown by (i), a neume written in two graphic elements by the scribe of C corresponds to a curved shape written by the scribe of S. The smallness of this number, two, juxtaposed with the overwhelming agreement in correspondence among the rest of the cases, ninety, suggests that these two cases represent different readings and that they should be regarded as the proverbial exceptions that prove the rule. This establishes that, in each of these two notation systems or 'scripts', there were two dominant ways of writing an upward motion of two notes, one indicated by an angled form in C, which corresponds to – 'is cognate with' – a curved form in S (Example 15(a)), the other indicated by two separate strokes in C, which 'is cognate with' the angled form in S (Example 15(b)).

Example 16 includes liquescent forms of two kinds: under (a) are shown forms that seem to augment the simple point; under (b) are shown forms that seem to augment the graphs for two-note groups.[54] Since both may be written in place of two rising notes without liquescence, both have been included in the sample. The Breton neumes represented under (b) again show a spectrum of dot/dash at the beginning; likewise the rising stroke can vary from slightly curved to the left, through straight, to quite a pronounced turn to the right. The cases represented under (c), (d) and (e) should all be set aside, on the grounds that they have different meanings:

[54] On the varieties of liquescent signs see Cardine, 'Sémiologie grégorienne', 136; and Haug, 'Zur Interpretation der Liqueszenzneumen', 93ff.

Example 17 Corresponding graphs for two rising notes in S, M, C and La.

where the S scribe wrote a liquescent neume, the scribe of C did not. This leaves (a) and (b): the first with thirty-six cases of correspondence between the two forms, and the second with ten. Once again the consistency of correspondence between forms in these two different scripts, as written in these two manuscripts, suggests cognate relations.

There is no reason to think that these patterns of correspondence derived from one set of a hundred examples and another of fifty examples would look any different had I listed *all* the signs for a simple upward motion or for an upwards liquescent movement in these two manuscripts – as Walter Wiesli did for the *quilisma* neume in S.[55] What would surely have increased would have been the individual modified versions sitting around these dominant patterns. From this evidence of an extremely systematic correspondence between signs in the work of two different scribes, I believe it is possible to argue that these scribes were conscious of distinctive modes of delivery and rigorous in conveying graphic information about them. The clear pattern of cognate relations between neume forms uncovered here can be extended to include the Lotharingian script also, as written by the scribe of Laon 239, and the Frankish script written in M (see Example 17). There is no graphic equivalent for the sign written in two parts by the scribes of C and La in the scripts written in S and M; equally, there is no direct graphic equivalent in C and La for the little curve written by the scribes of S and M to show liquescence. The angled form, graphically similar across the four notations, but with two different meanings, may or may not have been transferred from one early script system to another: without more information about the conceptual basis of each system – the step from sound to a written sign – this cannot yet be resolved.

Semiological study has shown that different forms of neume for the same two-note ascending pitch pattern (in any one script) indicate different modes of delivery: while most of that semiological study has been carried out using Sankt Gallen notations as a model, there has also been some study of the Lotharingian script in La. In a useful table, Agustoni and Göschl include the equivalences between S and La set out above[56] and explain that the angled Lotharingian form, matched by the curved Sankt Gallen form, signifies a 'current' (running) delivery; Cardine (discussing the Sankt Gallen form only) has the description 'light', signalled by

[55] Wiesli, *Das Quilisma im Codex 359*.
[56] Agustoni and Göschl, *Einführung*, II, 19.

a cursive and thus rapid way of writing the sign.[57] Agustoni and Göschl explain the Lotharingian form written in two strokes and the angled Sankt Gallen form as a 'non-current' ('not running') movement,[58] while Cardine describes the angled Sankt Gallen form as indicating two longer notes.[59] Whether shorter means 'lighter' and longer 'heavier' is quite unclear; yet, in this discussion of the history of the scripts, the difficulty of securing the actual meaning in relation to the intended result in sound should not obscure the fact of consistent differentiation.

This contrast between different neume forms with the same pitch signification brings up a whole new set of questions, above all whether or not such differentiation was already expressed in earlier notations or not. For now, that question cannot be answered. The possibility that some common graphic basis lies behind graphically similar neume forms has to be envisaged: this would indicate some of the mechanisms by which basic signs were altered and exchanged during the period between their invention for use as musical signs and the emergence of settled regional scripts – through developments of particular graphs, through change of meaning of particular graphs and through the creation of new graphs or new ways of associating older graphs. The juxtaposition of these ways to represent two rising notes also draws attention to two techniques used by ninth-century scribes for extending the range of meaning of a basic range of signs. Besides the invention of new graphic forms, scribes used special configurations of basic shapes: in the Breton and Lotharingian scripts, it is not the actual graphs that carry the extra meaning but the procedure of their being written in continuous or in separated strokes. How far back that procedure can be traced remains to be seen. At this point it is not possible to tell whether the way in which the scribes of S and M use the two forms held in common predates the Breton and Lotharingian use or vice versa, and thus in what way historical development might be manifest in this group of signs. Finally, the Lotharingian forms show clear calligraphic development from their simpler Breton equivalents, using turns at the ends of strokes and a new form in place of the simple point, written as a short stroke with a tick (straight or curved) at the top. Without interrogating its meaning, this new form represents a visual clarification of the point, since the latter could disappear on a page (for all sorts of reasons, including light ink, parchment with badly removed hair, bad eyesight),[60] but the former, the new form, had more body. The design of new graphic forms and the use of a procedure whereby forms written in separate strokes would signify something different from signs written in continuous strokes are two of the most prominent threads in the historical process of developing these notational systems.

4.4 COMPARISONS BETWEEN EXTANT SCRIPTS

The examination of neumes for two rising notes in four notations has demonstrated that, working outwards from 'cognate' signs, it is possible to develop insights into processes of

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[57] Cardine, 'Sémiologie grégorienne', 19.
[58] Agustoni and Göschl, *Einführung*, 22.
[59] Cardine, 'Sémiologie grégorienne', 19–20.
[60] On the *uncinus* see further below, pp. 240–45.

development and change in neumatic scripts. It is now time to extend this kind of investigation, to explore more fully the variety of script types apparent in notations in use by circa 900. The comparison of different music scripts will consider graphic forms and meaning, the change in both and the possible migration of signs and forms between different scripts. It must therefore be able to recognize the use of the same form for the same purpose (with the same understanding of how to read it, thus the same sign), and for a different purpose (a different understanding of how to read it, thus not the same sign); the use of a different form for the same purpose; strategies for ways of laying out neumes in space (related to intervallic structure); and strategies of interaction between neumes (related to intervallic structure, speed and articulation). At this point the primary aim is to burrow down into the fundaments and backgrounds of these scripts: it is only on the basis of the results of the enquiry into relations between scripts that the moments and modes of divergence and reasons for change can be evaluated. Consequently, while issues of design are at the forefront of the exploration of differences, consideration of design across each individual script, and across the chronological period 800–900, will be the focus of Part III, using the results obtained here.

All the comparisons will be made between scripts as written by individual scribes: the results of these comparisons will necessarily be circumscribed by that limitation. Yet the restriction to the work of individual scribes is also a desideratum, since there is a high level of personal judgement and choice in any neumatic notation. Any one scribe may exploit (or ignore) the potential of a script system to a greater or lesser degree. In the work of any text scribe, individual ways of handling letters and words will usually emerge; in the work of any music scribe, the capacity for individualized ways of writing out melody is greater by some distance.[61] Whether or not a scribe was working from one (or more) exemplars, showing how a melody might be written out, it is hardly conceivable that a scribe was not mentally reviewing the melody at the same time.[62] Thus, even more than in the case of text (which needs to be understood at the level of the individual word, as well as the phrase, for the scribe to copy well), the writing of neumatic notation could have resulted in nonsense, had not the scribe been able to sing the melody being written (at least in his or her head). For many, aspects of this kind of music writing operate by reference to something held in the memory, and the way in which neumatic scripts are designed indicates dependence on successful recall of those memories in order to be fully read. The scribe must be cognizant of (or able to recognize) the connection between melodic passages and text syllables, the intervallic pattern of the melody and those ways in which long melismas should be subdivided; apart from these fundamental characteristics, each scribe is likely to have learnt to sing a specific chant with

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[61] On the 'potential of possibilities, procedures and different strategies', see especially Arlt, 'Anschaulichkeit', and *idem*, 'À propos de la notation "paléofranque"'.

[62] See Treitler, 'Communication', 569, where he argues that 'To me it is both intuitively and evidentially clear that writing down, especially in the early times that we are talking about here, can have been a mix of copying and putting down what was in the scribe's head'.

a specific rhetoric, whether that rhetoric touched on speed, articulation or weight at individual moments in the course of the chant.

Beyond this cognitive basis of neumatic scripts there are other reasons for consciousness of individuality. Since, as a writing system, these scripts allowed scribes to record a variety of kinds of information and to clarify or fix meaning more or less precisely, their potential for distinctiveness in the hands of individuals was also much greater than that of text script. It is not only a question of the extent to which a scribe was able to encode detail into his or her work: those musical issues that interested individual scribes could vary. One might wish to record nuance of a kind that went unnoticed by another musical scribe. One kind of chant might require the notation of nuance of a kind that was unimportant in another.

To the extent that we are dealing with a small number of examples, it is not possible to look far beyond them into the work of institutionally supported scriptoria (with obvious exceptions such as the abbey of Sankt Gallen). We cannot judge to what extent what might appear as individuality in the work of scribes – when compared across long geographical distances and chronological periods – represented the settled practice of an institution, or something less established at the time the notations were written. Nevertheless, writing was a means of communication, from one singer to another: there had to be conventions of understanding between individual writers and readers, such that the meaning of particular forms and procedures for setting those forms beside each other made sense to both groups. This is not so difficult to understand in view of the relation between neumatic notations and their object in sound; indeed, the sheer fluidity of the system of neumatic scripts, the extent to which there is *so much* sharing of graphic signs and procedures for arranging them on the surface of parchment, over a text, is entirely dependent on the fact of a shared knowledge of that sound that the notations represent. If a notation was intended to help a reader to recall a memory of something that had a more precise shape (in his or her experience) than that represented in writing, then there could be an easy exchange between readers and scribes, and between scribes themselves, including between those who wrote different types of script. That certain forms and procedures became consolidated in different ways in scripts written in different regions merely underlines the extent to which, in an early period, scribes felt able (and had the desire) to make neumatic script work harder for whatever ends they aimed at. Clearly, as time went on, and practice became more settled, a process of conventionalization would have led to more stability and less change and to the establishment of scriptorial practice wherever an institution had the resources to support it, giving the impression of fixity that has so influenced modern thought on neumatic scripts and notations.

5

Frankish Scripts

5.1 FRANKISH SCRIPT IN EAST FRANCIA AND IN ITALY: SANKT GALLEN AND BOBBIO

The missal Milan Ambrosiana D 84 inf. (here M), made at Bobbio in the late ninth or early tenth century, is notated in Frankish neumatic script, as is also the contemporary cantatorium CSG 359 (here S). Figures 20, 21 and 22 show the notations in these two manuscripts for *Alleluia V. Dies sanctificatus* and for the Graduals *Benedictus qui uenit* and *Eripe me*. In this group of images, notations for more than one chant, for more than one type of chant and for chants in different modes can be seen.

The fact of a shared way of laying out neumes on the page is very clear here: in both manuscripts, the scribes start the neumes for a new syllable at a standard height above that syllable – high enough for any neume graph to be quite distinct from the text – and then work on, starting each new graph at the same height at which the previous stroke had finished.[1] The effect of this is more or less to ignore the rise and fall of the melody, except in as much as it is conveyed within the neume forms themselves. But there are also differences in the conditions under which each scribe worked and in the degree of discipline observed in following this general practice.

This way of writing neumes can be observed in exemplary manner in the melisma for the last syllable of *Alleluia* in both manuscripts. As indicated in the pitched version in Example 18, this melisma begins from **G**, moves down from this and back up several times, and ends on **D**, a fourth below. In both manuscripts, the line of neumes moves slowly upwards to the right, in M at a greater degree of inclination than in S. In the work of the S scribe, it is easy to observe the movement of the pen to the right but not upwards or downwards as it is lifted and set down again on the parchment: this scribe always started a new stroke at the same height at which he had finished the previous one.

In notation for the Gradual *Eripe me* in M, the neumes over *iracundis* rise throughout a passage of nineteen notes (see Figure 22): when notated diastematically, the movement after

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[1] On this way of writing out neumes see Rankin, 'On the Treatment of Pitch'.
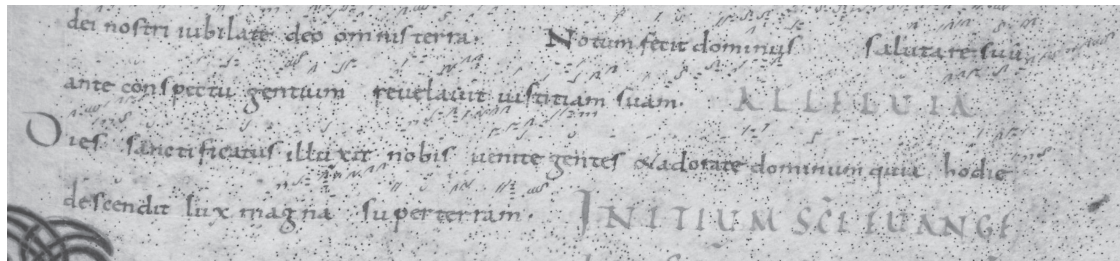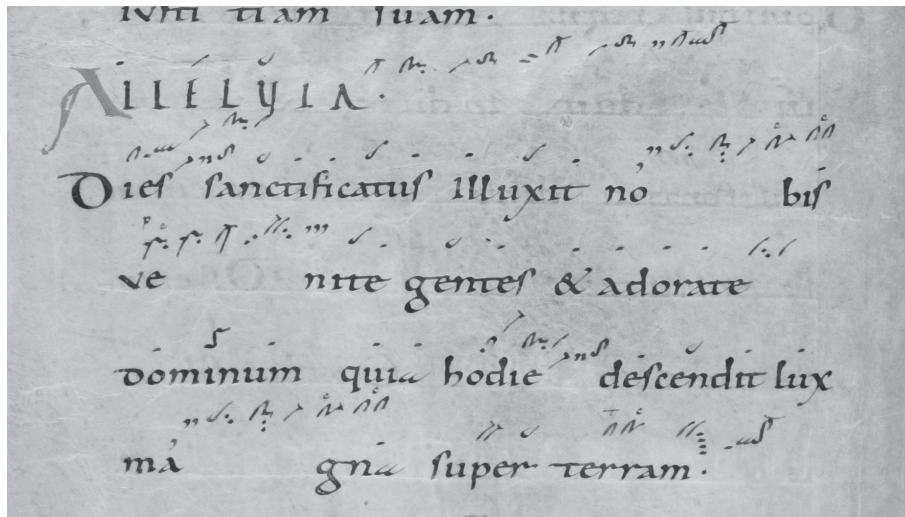
Figure 20 The *Alleluia V. Dies santificatus* in: Sankt Gallen, Stiftsbibliothek Cod. Sang. 359, p. 40 and Milan, Biblioteca Ambrosiana D 84 inf., fol. 33r. © Veneranda Biblioteca Ambrosiana – Milano/De Agostini Picture Library.

the sixth note is downwards through a sixth from **c** to **E** (Example 19). The same contrasted behaviour can be seen nine words later, at *iniquo*. Indeed, this Bobbio scribe's direction of work was fairly relentless: sometimes his neumes move diagonally upwards throughout a short word group, no matter what the intervallic pattern or direction involved. An example of this is for the passage *doce me facere*, suggesting that the movement upwards was in some way linked to the number of neumes written by the scribe in one sequence of writing before he took his eyes off the page to look at an exemplar (if he was using one), rested his hand and thought through the musical shape of the next passage.[2] The tendency of the text scribe of M not to leave enough space may also have been a factor, but it is likely that this was allowed by, rather than being the cause of, the rising diagonal lines followed by the neumes in this script.

[2] On 'transfer units' in writing out text ('the amount of text [the scribe] retained in his memory when transferring his attention from the exemplar of a . . . text to his copy'), see Malcolm B. Parkes, *Their Hands before Our Eyes. A Closer Look at Scribes: The Lyell Lectures delivered in the University of Oxford, 1999* (Aldershot: Ashgate, 2008), 63.
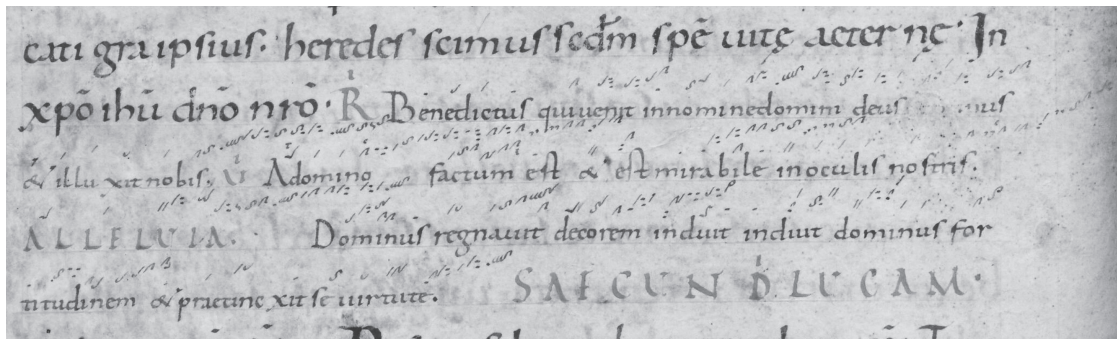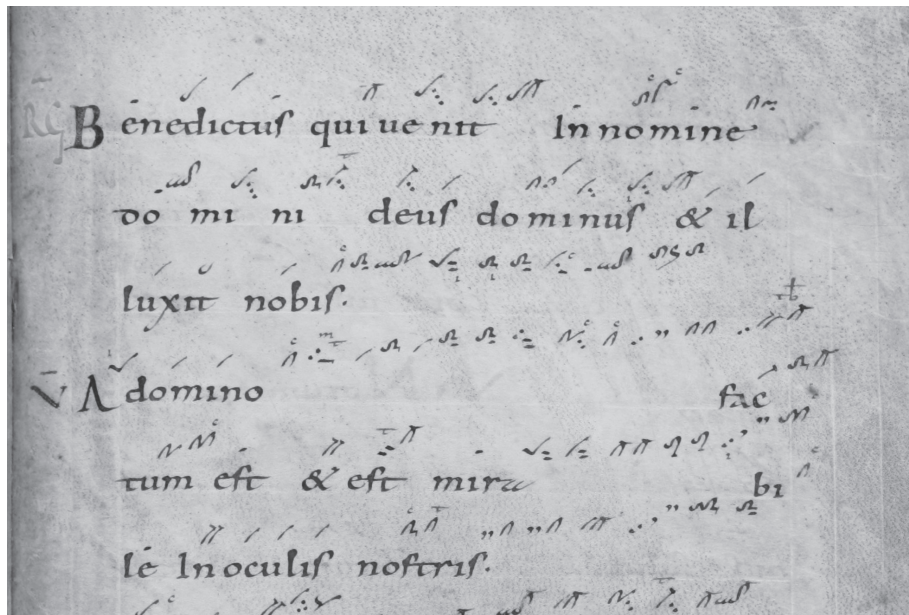
Figure 21 The Gradual *Benedictus qui uenit* in: Sankt Gallen, Stiftsbibliothek Cod. Sang. 359, p. 39 and Milan, Biblioteca Ambrosiana D 84 inf., fol. 31v. © Veneranda Biblioteca Ambrosiana – Milano/De Agostini Picture Library.

The same procedure of moving diagonally upwards was followed by the scribe of S, although in less extreme form. The neumes for the twelve-note melisma over *iracundis* move upwards (Figure 22 and Example 19), but while the neumes for the last syllable *iracundis* were moving upwards at the beginning of the melisma, the scribe then encountered the lower stroke of g (*gentibus*) in the text line above and had to moderate the rise to take a more horizontal course. In the line immediately underneath this, the neumes for *me* show a natural rise, the point at which the pen is set down on the parchment always matching the level at which it had just been taken off; these four neume groups, for eleven notes, correspond to a melody that falls from **c** to **E** (Example 19). In the verse *A domino* for the Gradual *Benedictus* (Example 13) a long melismatic passage on *domino* moves through a wide range, first circling

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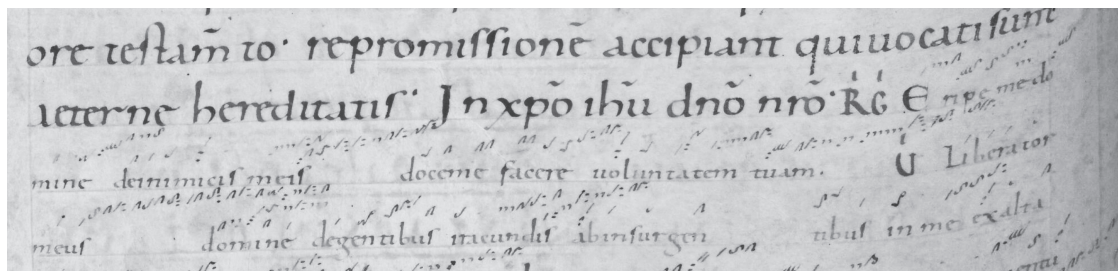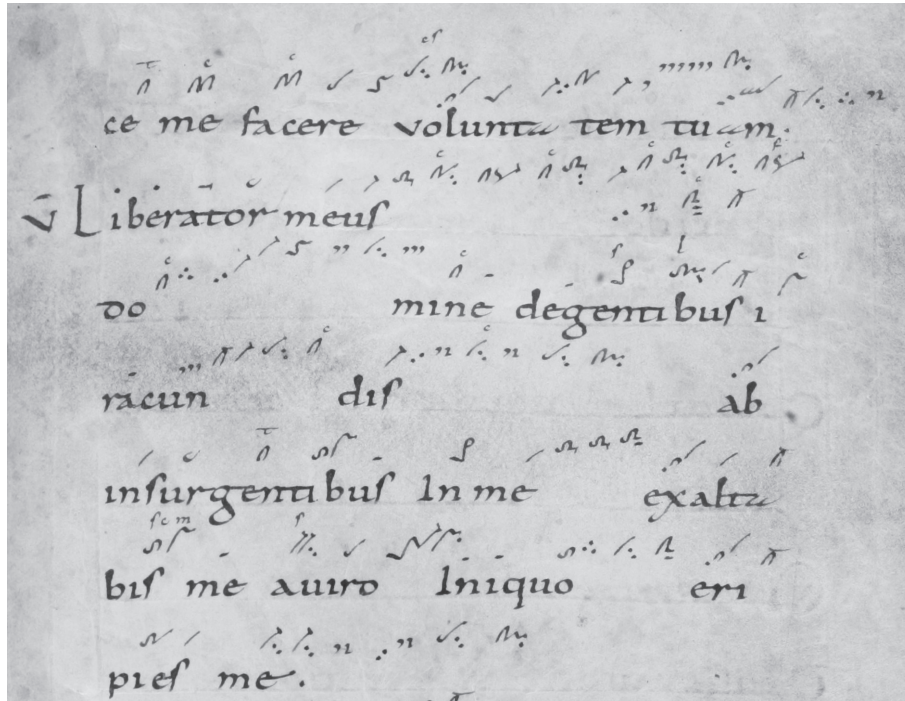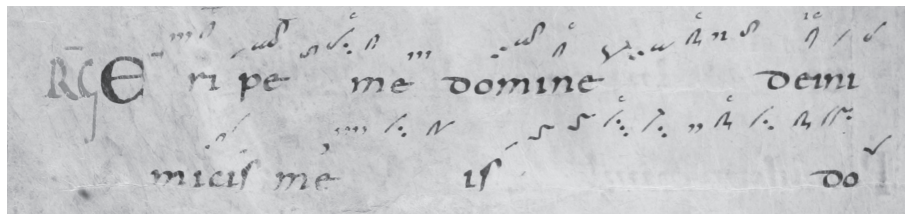
Figure 22 The Gradual *Eripe me* in: Sankt Gallen, Stiftsbibliothek Cod. Sang. 359, pp. 84–5 and Milan, Biblioteca Ambrosiana D 84 inf., fol. 101v. © Veneranda Biblioteca Ambrosiana – Milano/De Agostini Picture Library.

around **c**, then falling from **e** to **F**, and then rising again, as far as the octave above (**f**), finishing on **c**. For all of this up and down movement, through a relatively wide range, the scribe's line of writing moves continuously through a diagonal across and up the page (Figure 21); by the time he has reached the end of the melisma, at the right hand side of the writing space, he is writing neumes at the level of the text line above.

Example 18 Passage from *Alleluia V. Dies sanctificatus* (S p. 40, M fol. 33r, GT 49).

Example 19 Passages from the Gradual *Eripe me* (S p. 84, M fol. 101v, GN 90).

That in his own head the scribe of S was aware of the melody moving up and down, however, becomes clear in places where he ignored – was able to ignore – his normal practice. This can be seen in the first word of the Gradual *Benedictus*, where the neume over the third syllable begins at a level conspicuously higher than the position where the one before had begun (for a melody that moves from **a** up to **c**), and in the neumes over *et illuxit*, again matching movement from **a** to **c** (Example 13). In both these cases

the second, higher neume is written well above the vertical height this scribe normally observed in beginning a syllable. This habit of allowing melodic movement to be more clearly indicated through movement of single neumes up the page can be seen quite often in this scribe's work, above all when single syllables were sung to single notes.[3] An example of the opposite, beginning and continuing below the usual vertical level, is at *hodie* in *Alleluia V. Dies sanctificatus* (Figure 20). Here the problem seems to have been caused by a particular convergence of factors – the ascender of d and the need to separate the neumes over the second syllable from those over the first, causing the neumes for the second syllable to reach beyond the third syllable. In these circumstances it looks as if the scribe was trying to associate the neumes for this third syllable as closely as possible with it.
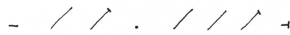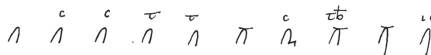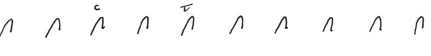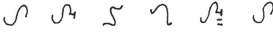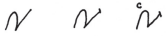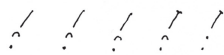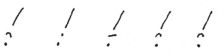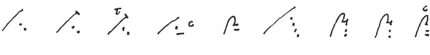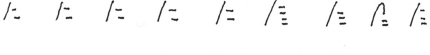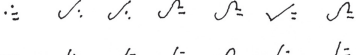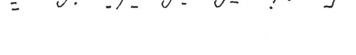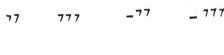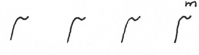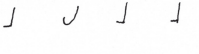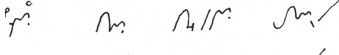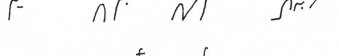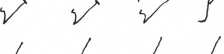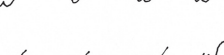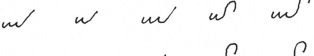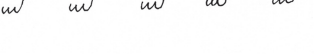
In M, while some words had been written out by the text scribe with space in between, this space was still not sufficient to accommodate many long melismatic passages; as a result, the scribe often had to write neumes for a new syllable directly underneath the neumes for the previous syllable. In S, there was generally more space allowed than in M, although not always enough: the same need to write one passage of neumes underneath another can be seen at the end of the second line of *Alleluia V. Dies sanctificatus*, where the end of the *nobis* melisma stretched over the second syllable, *nobis*. In M, neumes for the syllable *nobis* reached as far as the first syllable of the next word, *uenite*. In the notation for the Gradual *Benedictus* in M (Figure 21), several syllables with long melismas were not provided with any extra space before the next syllable. This could become a serious impediment to clarity, as, for example, at the end of the responsory on *nobis* and on *mirabile* in the verse. In contrast, the text scribe of S left two-thirds of a ruled line free after *nobis*, beginning the verse on the next line; for *mirabilis* he left as much space as he could after the second syllable, setting the third at the end of the ruled line. This generosity of spacing was not always sufficient: in the verse of *Eripe me* the melisma on the last syllable of *meus* did not fit onto the line, and the notating scribe was forced to continue below his first line of neumes (for a total of ten notes).

One further factor in spacing, and its relation to clarity for the reader, is division within words: these were made by the text scribe of M only with reluctance. The one case – in the three chants studied – where a word is divided to leave significant extra space between syllables is *insurgen/tibus* in the verse of *Eripe me*: curiously this is a place where no extra space for the neumes was actually required! Although there are examples elsewhere in the book of separated syllables, they are strikingly rare.[4] The main way in which this text scribe sought to achieve space along the horizontal axis for writing out long melismas was by leaving space between words, even if the decorated syllable was not the last. The work of the scribe of S was more precise, always linking text syllables and melismas clearly. Of course, the big advantage of this general way of writing out neumes, moving up a diagonal towards the right, was to guide a reader's eye quickly to the neumes closest to a text syllable, those written immediately above; indeed, in terms of reading

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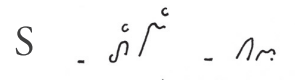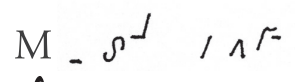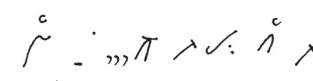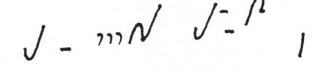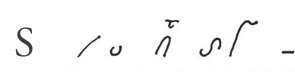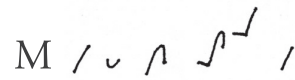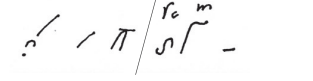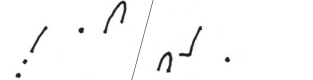
[3] See Rankin, 'On the Treatment of Pitch', 158–62.

[4] See, for example, the Offertory *Iubilate deo* on fol. 40r, where two words have inner divisions.

Example 20 Neumes in three chants in S and M.

Example 21 Use of the *uirga strata* in three chants in S and M (GT 45).
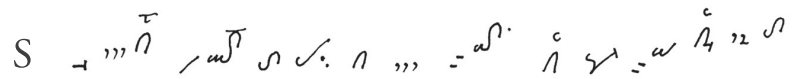
order, having read across and up, any reader used to reading this script would know that in dropping down to the next text syllable, he or she would find the relevant neumes in that position on the page, rather than higher. In other words, the reader should follow the signs on the page in zigzags. This is equally valid for both manuscripts, whatever the niceties of word and syllable spacing.

The repertory of neume forms used by the two scribes is also similar, but there are important divergencies. Most of the neumes used in these same three chants are written out in Example 20; longer combinations ('compound neumes') have been omitted, since these do not recur often, and add little to the overall conclusions about relationships. In this example neumes from each of the two manuscripts used at the same position in a chant are shown together. The neumes of S are above, the neumes of M below.

There is only one neume form that is used by one scribe and not by the other (Example 20 (l)): this is generally referred to as the *uirga strata*. On all four occasions of its use by the scribe of S, the scribe of M wrote a standard sign for two rising notes, three times in the angled form and once in the curved form (as in Example 20 (b)).[5] All four

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[5] Cardine described the *uirga strata*, when used in place of a form for two rising notes, as a 'pes léger': 'Sémiologie grégorienne', 92. On the *uirga strata* see also Agustoni and Göschl, *Einführung*, II, 29ff.
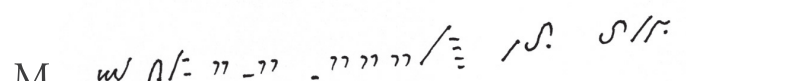
Example 22 Passages from the Gradual *Eripe me* (S p. 84, M fol. 101v, GN 90).

cases correspond to a step of a semitone in pitched versions (Example 21).[6] No general judgement of either scribe's use of these signs should be based on so few examples. The form written by the scribe of S is a combination of the simple upward stroke (*uirga*) and a short zigzag graph (*oriscus*): this has an equivalent written in the reverse order, *oriscus-uirga*, and known as a *pes quassus*.[7] This neume is also used unevenly in the two manuscripts (Example 20 (n)): both scribes write it, but a *pes quassus* in S may sit against a simple form for two rising notes in M and vice versa. A third group of neume forms based on incorporation of the *oriscus* into a longer graph is shown in Example 20 (m): these are roughly similar across the two manuscripts, although the scribe of S is more likely to join neume groups together than his Bobbio counterpart.

Among the other signs, there is sometimes a very direct pattern of graphic similarity, as for the simple forms for two rising notes (Example 20 (b)), but more often a pattern of basic similarity with much more variation through refinement by the scribe of S. The plainest example of this is the sign known as a *quilisma* written as a series of bows, which can be combined with other graphs as short as the upward stroke (*uirga*), or extended beyond this (Example 20 (o)). The *quilisma* was written by these two scribes in very similar ways at

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[6] In all four cases the GN version matches that of the GT for the two notes concerned; for the restitution see *BG* 22 (1996), 14–16 (*Benedictus qui uenit*) and *BG* 26 (1998), 9–11 (*Eripe me*).

[7] Cardine, 'Sémiologie grégorienne', 114.

Example 23 Passages from *Alleluia V. Dies sanctificatus* and the Graduals
Eripe me and *Benedictus qui uenit* (S, M).

similar moments in the chants, but with one wrinkle; namely, that the scribe of M always wrote it with three bows, whereas the scribe of S distinguished between two-bow and three-bow forms – both appear in the Gradual *Eripe me*. Here the S scribe wrote the two-bow form twice in the same melodic context, when the *quilisma* was sounded on a note a tone below the next above (*domine, domine*, Example 22); he wrote the three-bow form twice, again in a recurring melodic context, when the *quilisma* was sounded on a note a semitone below the note above (*Eripe, tuam*, Example 22). On all the other occasions when this neume occurs in the other two chants under examination here, it was written with three bows (*Alleluia, Dies*, Example 18; *domini, nobis* (twice), Example 13): these include examples of both tonal contexts, with a semitone or a tone above. Since the three-bow form is the more usual, it looks as if the scribe of S was using the two-bow form as a kind of warning: in *Eripe me* it appears very soon after the three-bow form and helps to distinguish between the lower third **DEF** and the higher third **FGa**. The use of the three-bow form throughout *Benedictus*, in both of the melodic situations that are distinguished in *Eripe me*, indicates that the two forms do not directly correlate to specific intervallic situations; rather, one represents the usual way of writing and the other a deliberately changed form, to alert the reader.[8]

[8] But see esp. Wiesli, *Das Quilisma*; also Cardine, 'Sémiologie grégorienne', 123; Agustoni and Göschl, *Einführung*, II, 24ff.

The only other neumes for which evident pitch-related nuance is introduced are found among the signs for two descending notes (Example 20 (c)), and for the three-note pattern low–high–low (Example 20 (d)). For two descending notes, the scribe of M writes just one form (to which he can add the letters 'c' and 't', unrelated to pitch content), whereas the S scribe writes two forms. His main form is written as an arch with legs of equal length; in the other form, the S scribe pulls the right-hand leg of the arch further down. In the *Alleluia* this neume is written where the melody falls through the fourth **DA** (*uenite*, Example 23); it is also written in *Eripe me* where the fall is only through a tone, but reaches the lowest limit of the chant (*de inimicis*, Example 23). Among forms for writing three notes low–high–low there is one written by the scribe of S with the last, descending stroke lengthened, analogous to the two descending notes form. This is written twice in succession in the notation for *Benedictus*, where the three-note pattern can be written diastematically as **bca** (*mirabile*, Example 23).

This extension of the basic stroke length is not the only change made to forms for two descending notes and for three notes low–high–low: another series of modifications deals with speed and/or emphasis (Example 20 (c),(d)). For two descending notes the scribe of M writes one basic form, but can modify it using the letters 'c' (*celeriter*) and 't' (*tenere*): he recognized the possibility of indicating to the reader the lengthening or shortening of individual notes. The scribe of S has a wider range of possibilities for lengthening and shortening: besides 'c' and 't', he writes 'tb' (*tenere bene*); besides writing 'c' to the left of the sign, it can be written to the right, implying the application of this shortening to the second rather than the first note; for lengthening, a horizontal stroke can be written across the top of the arch (*episema*), indicating the lengthening of both notes;[9] and finally, an extra stroke can be added to the end of the arch, indicating lengthening of the second note only. In terms of equivalence, the scribe of M uses each of 'c' and 't' only once, each time corresponding to the same usage in S; the scribe of the latter uses these letters abundantly. Thus the work of the two scribes contrasts in two ways. First, the scribe of M notates less nuance than the scribe of S, even though he is aware of ways of doing it, by using letters; and, second, apart from letters, the scribe of S uses further graphic techniques (added and extended strokes). His modifications of the basic forms allow him to encode in writing a more varied enunciation of musical sound than is evident in the work of the scribe of M.

These same conclusions can be reached observing signs for single notes (Example 20 (a)), for three notes high-low-high (e) and for series of falling notes (g). The forms for four notes in the configuration low–high–lower–lower are less easily compared on the basis of three chants, requiring many more examples before consistency of execution (or not) can be determined. For other signs the differences between the work of these two scribes appear to result from graphic habit: for a pair of commas ('*strophae*', Example 20 (i)), the scribe of S always wrote the second with a small stroke to the right at the end, where the scribe of M wrote two similar graphs. Since there is no other form, at least in the three chants

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[9] Cardine, 'Sémiologie grégorienne', 18.

Example 24 Passages from the Graduals *Benedictus qui uenit* and *Eripe me* (S pp. 39, 84, M fols. 31v, 101v, GT 45, GN 90).

A do-mi-no   do-   mi-ne   i-ni- quo

examined here, there are no grounds for arguing nuance on the part of the scribe of S. Likewise, the M scribe's way of writing a horizontal dash followed by a series of commas at a higher level is matched in the notation of S by commas for all the signs in the group. Indeed, differences of graphic style are a noticeable category of contrast between the two scripts written by these scribes. While the basic forms are closely similar, the ways in which these are written by the two scribes are not identical: the axes of up and down strokes are closer to the perpendicular in M, closer to the horizontal in S. Signs for single notes within neumes for note groups such as that for three descending notes (Example 20 (g)) were written by the scribe of M as little dashes and by the scribe of S as points. And so on. Effectively the two scribes are writing the same neume forms, with minor differences of length and inclination of strokes.

Yet there is a further category of graphic difference between the work of these two scribes: a good way to see this is in the *trigon* neume. This is used to indicate a group of three notes (or, in an extended form, more than three), of which the first two are on one pitch and the third on a lower pitch (Example 24). Consisting of three points or dashes or commas, the sign reflects the number of notes it represents in a directly iconic manner. As written in M, that iconicity is maintained in relation to pitch content, with two commas at one level and a dash below the second comma (or, as in the Gradual *Benedictus* at *domino*, as three dashes). In S the sign is always written as three points or two points followed by a dash, but the orientation of the three graphs is different from that in M. In terms of a triangle, the S graphs sit with the long side at the bottom. In this form the sign continues directly to reflect three notes, but not the pitch content, and thus depends on convention rather than iconicity to be read. This treatment deserves the description 'stylization', and it is a feature of much else about this scribe's work too: the long form of the low–high–low neume (Example 20 (d) 3), written with curved beginning and ending strokes, rather than the straight strokes as used by the scribe of M; the pulling of the upper stroke of the *pressus* beyond its first curve, rather than the simple curve written by the scribe of M (Example 20 (m) 1). In none of these cases is the meaning of the sign in S evidently different to that in M. One important effect of this stylized calligraphy is clarity: the *pressus* sign

(m) is consciously differentiated from the *uirga strata* (l), for example. It is possible that the more symbolic form of the *trigon* written by this Sankt Gallen scribe also reflects a drive towards clarity, since this has become extremely distinct and recognizable as itself in its upside down triangular form. Whatever the reasons, the tendency towards stylization is quite marked.

5.1.1 Summary

In relation to questions about the origins and development of scripts in the ninth century, what can be made of this comparison? It has shown how two scribes used a similar repertory of forms and a set of procedures to achieve largely equivalent ends – with the qualification that one scribe is noticeably more concerned with recording detail than the other. Although there are some differences between the ways in which they write particular neumes, and some neume forms are present in one scribe's work but not in the other's, the degree to which forms and meanings are consistent in and across the work of both scribes allows the use of the term 'script' to describe these writing practices. At this point, circa 900, that set of writing practices was already quite settled across a broad range of signs. Most significant, however, is the demonstration of refinement through modification of neumes, a process that depended on strategies for the alteration of basic forms (rather than unvariable forms). Those strategies for modification – through the addition of letters, extra strokes or adjustment of essential strokes – had also become quite established. Finally, the fact that further forms could be devised using basic script elements (*uirga strata, quilisma* with two bows) reveals one of the main paths along which this script could be developed to encompass a larger sign repertory. Of course, it was not necessarily this Sankt Gallen scribe who embarked on that path of development; nevertheless, that scribe plainly understood how to exploit the potential of the script.

If considered across the range of East Frankish manuscripts in which this script is written, the addition of short strokes to show lengthening or emphasis can be seen to be fairly restricted, limited to manuscripts made at Sankt Gallen, or including the *Liber Ymnorum*, which had itself come from Sankt Gallen, and one or two others.[10] This technique cannot be said to have been invented at Sankt Gallen, even if that is where it was most prominently cultivated. The addition of such strokes would certainly have required more time, not only simply to write, but, more significantly, for a scribe to review in his/her head how a melody might be sung. In S the attention to detail of lengthening and shortening is exceptional, indicating an especial concern with the shape of even the shortest of note groups. Among the many modified signs used by the Sankt Gallen scribe, the two-bow *quilisma* is the only one which – used for a specific meaning ('*nota bene*') – seems to be unique to this manuscript: while it can be found in plenty of other manuscripts written at Sankt Gallen, it appears to be

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[10] Among the manuscripts considered in this study that use the *episema*, those not from Sankt Gallen include Milan D 84 inf., Munich BSB clm 29308/1, Munich BSB clm 6431 and Wolfenbüttel HAB Weiss. 66.

used without systematic application to interval patterns.[11] What we apparently see here is a specialist use, which may have been devised by the scribe who notated the cantatorium or by one of his teachers. Certainly, the degree of differentiation of signs is much greater in the work of the cantatorium's scribe, and this is likely to be related to the nature of the book. As a missal, Milan D 84 inf. from Bobbio was not only or especially intended for the use of a cantor (although it may have been intended as the main repository of notated chant in that establishment at the time when it was made). In contrast, the Sankt Gallen cantatorium could hardly be intended for a more specialized function, directed to a cantor, and containing only those chants that would have been sung by a single person, not by a group. These differences of function probably also underlie the divergent attitudes to word and syllable spacing, organized with much more clarity and precision in the Sankt Gallen cantatorium than in the Bobbio missal.

In its incorporation of a wider set of signs, as well as the degree of stylization of some signs, the script written by the scribe of S represents a further refinement of the kind of script written by the scribe of M. That refinement must in part have been inspired by the wish to record more musical detail, as well as improvements in visual clarity. This does not mean that the script written in M can be seen as representative of what was received by Sankt Gallen as a model for neumatic script or that the script written in S was actually refined at Sankt Gallen rather than somewhere else – such conclusions would be too simplistic, based on this amount of information. It does mean, however, that the music script written in S – used since the second quarter of the nineteenth century as a model for understanding and conceptualizing neumatic notation – is not a good basis for understanding the earliest forms of neumatic script, for this was an already highly developed and stylized use of a script.

5.2 FRANKISH SCRIPT IN WEST FRANCIA

Among the various different types of music script written in West Francia, one is very similar to the East Frankish script considered above. This Western Frankish script shares a large number of neume forms with the Eastern type, as well as an approach to how those signs are placed in the space over the text: the same practice of writing neumes in a diagonally rising line is followed, whatever their intervallic relation to the preceding neume – except at the beginning of a new syllable, when the first neume begins from just above the text.

At first sight the main difference between Western and Eastern ways of writing this script is the inclination of up and down strokes: in the Western versions these are both closer to perpendicular to the writing line than in the East. There are also important differences in the repertory of neumes. In order to consider these differences, notations for specific chants should be compared. Although there are no ninth-century examples of West Frankish manuscripts with notations for mass chants made using this script, there are three manuscripts copied circa 900 or in the early tenth century in which notations for mass chants have

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[11] See Wiesli, *Das Quilisma*.
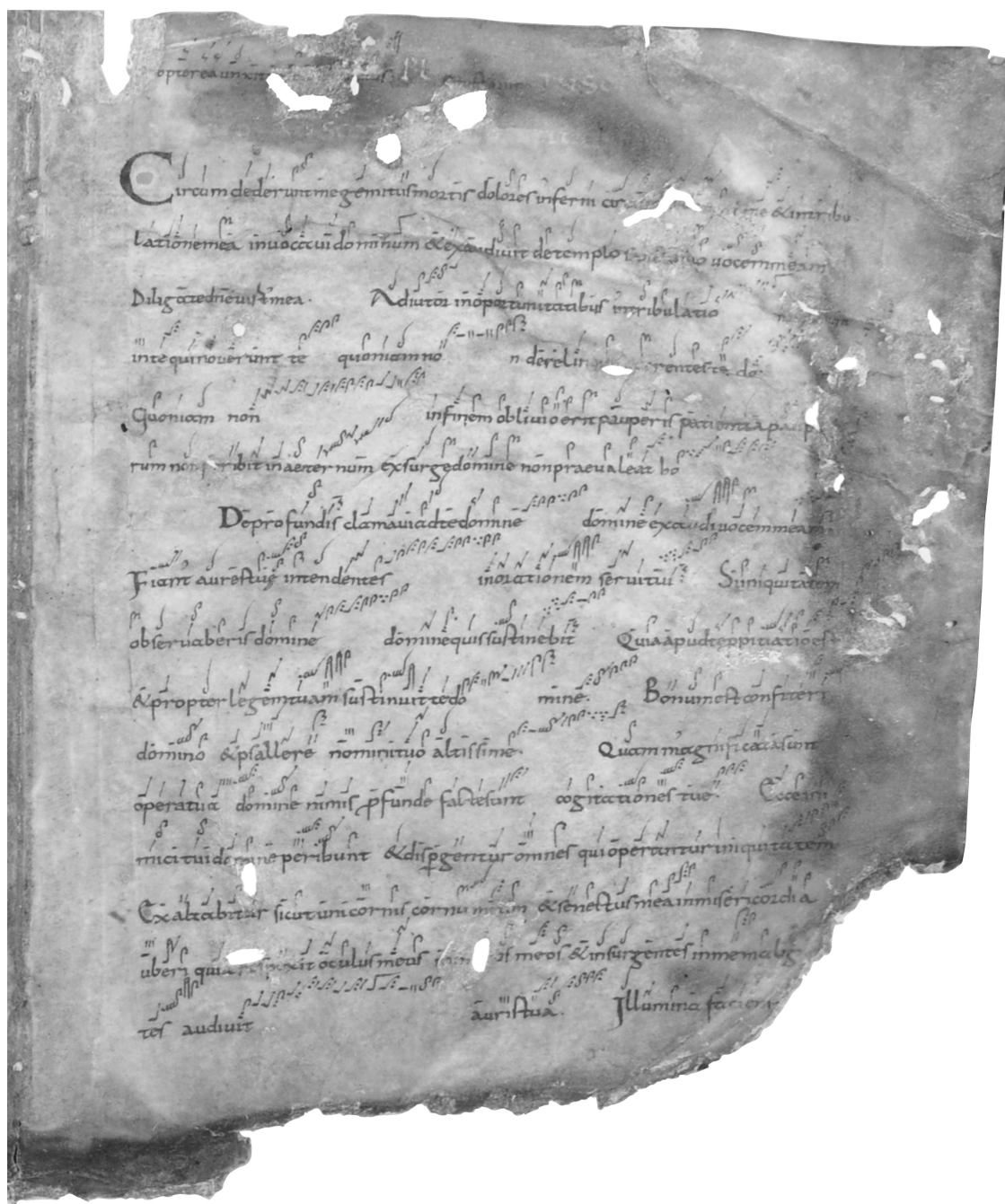
Figure 23 Autun, Bibliothèque municipale ms S3(4) front endleaf fol. 3r.

Example 25 Passages from Tract *De profundis clamaui* (S p. 59, M fol. 45v, A fol. 3r, recto side of endleaf, GN 411).

De pro-fun- dis cla- ma- ui ad te do- mi- ne

do-mi- ne ex-au- di uo- cem me- am.

Fi- ant au-res tu- ae in- ten-den- tes

Example 25 (cont.)

been written: these are Autun S3(4), endleaves (now fols. 3–4) (hereafter A); Graz 748, pastedowns (hereafter G); and Leipzig Rep. I 93 (hereafter Le). The first two of these are fragmentary and the third is not a gradual but a book made for a cantor (including a full set of Alleluias and a few tracts); thus there are almost no direct concordances between them: the only chants actually shared between these manuscripts are two Alleluias in G and Le. Since the aim of comparison is to discover not only in what ways the music script in each of these manuscripts is similar to or different from that in the others but also in what ways each is similar to or different from the East Frankish type, it is proposed that each be compared in turn to East Frankish notations for specific melodies.

The Autun scraps, consisting of two bifolia, are notated throughout by one hand, with the exception of the Offertory *Aue Maria* on fol. 3r.[12] The text scribe spaced out syllables that would support long melismas adequately, but it is also noticeable that the relationship between the size of the text script and the spacing of ruled lines is such that there is a generous amount of empty space above the text, allowing for rising lines of neumes in the case that adequate horizontal space between syllables had not been left. Indeed, besides writing neumes in rising diagonal strings, this scribe also commonly wrote neumes directly above those they followed in the melodic pattern: in the notation for the Tract *De profundis clamaui* (Figure 23), this can be seen at *profundis, exaudi, uocem*, and *orationem*. In the first and fourth of these examples, the first note indicated by the neume written above is sung at a higher pitch than the preceding note (Example 25); but the intervallic relation of notes represented by neumes written directly below and above each other can also be of other kinds. In the third and sixth of these examples,

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[12] This is written in a much darker ink and by a different hand, but with many letter forms similar to those of the main scribe. The folio numbers used here represent the current state of play, rather than a reconstruction: hence 'recto' and 'verso' are used merely to help location of a chant, but may not correctly identify the original physical situation of the leaves. Nothing is known about the origin of these two bifolia.

Example 26 Passage from the Introit *Meditatio*
(A fol. 4r, verso side of endleaf, GT 103).

do-mi-ne a-diu-tor me-us

the neume written above begins at the same pitch level as the one it sits above, and there are many examples where the relation is one of a falling pitch. In the case of *exaudi*, where a short dash is written above an upward stroke (*uirga*) followed by a *quilisma pes*, the dash apparently represents a note sung a third below the previous note. In S and M that intervallic relation is represented by a form for two falling notes. This Autun notation indicates that the scribe understood the grammar of the relation between a dash and an upwards stroke to be that of lower and higher, allowing the two signs over *exaudi* to be read as a higher note followed by a lower note, whatever their relative placement on the page. That this was no error on the part of the scribe is clear through repetition: the same melodic situation, represented by an upward stroke with a short dash above, can be seen at *orationem.*

In the notation for the first two verses of *De profundis clamaui*, the strong similarity of neume forms used in the notations of S, M and A is evident. A has a neume for two falling notes with a longer rising than falling stroke, more like that written in M than in S; a similar form for three notes low–high–low, although more vertically elongated in its graph than M and S; a similar form for three falling notes, consisting of a diagonal stroke and two points; a similar form for three notes high–low–high, and the same *quilisma*. The differences between these notations include categories already noticed above, such as the use in A of an angled form for two rising notes, where the East Frankish and Italian notations have a curved form (*clamaui, intendentes*), and a liquescent point written with a long stroke upwards, where the East Frankish and Italian notations have a small curve, without an upward tail (*aures*).[13] While a neume for three falling notes can be found written in three separate pen strokes (*intendentes*), it is also found in A in a joined-up form (twice for each of *exaudi* and *orationem*). Whether this is merely a graphic difference, a faster way of writing that sign, or represents a different meaning, is unclear. Short repeated notes are written as short parallel lines, rather than the comma shapes used by the East Frankish and Italian scribes. Finally, forms of sign in which an *oriscus* is joined to the upward stroke (*uirga*) – the *pes quassus* (*oriscus + uirga*) and *pressus maior* (*uirga, oriscus, punctum*) – are not present in the notation of A (*profundis, clamaui, domine, tui*). Beyond this the main category of difference is the greater detail in the

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[13] Given the similarity of this sign to that written over *intendentes*, it might be thought that the first represents a different reading (two rising notes, finishing liquescent), but this difference, between a short curved form in S and M and a much more extended form in A, recurs in other chants.

S notation, conveyed using added strokes (the various forms of *episema*), significative letters and modified graphs (the two-bow *quilisma* at *Fiant*, the long *torculus* at *tuae*).
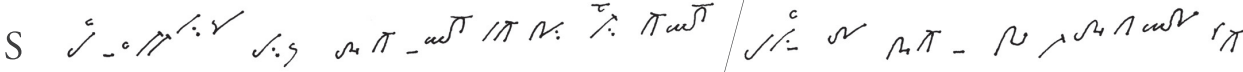
The comparison of these three notations for *De profundis* indicates that the choice between writing a point/dash or an upward stroke (*uirga*) for a single note lay very much in the hands of the individual scribe: the first three notes of this chant are handled differently by each of these three scribes, whereas those moments later in the chant at which single notes are sung to a syllable are mostly notated in the same way. The problem here is that the intervallic relation between notes represented by successive neumes is clear at later points in the chant, whereas at the beginning of the chant, there is nothing against which a first sign can be contrasted, nothing to suggest that a *uirga* indicating a higher pitch or a point/dash indicating a lower pitch should be written. At the beginning of this chant successive syllables, and then the beginning of the third syllable, are sung to the same note. The scribe of S wrote a dash above all three syllables; the scribe of M wrote an upward stroke for all three; the scribe of A wrote two dashes followed by an upward stroke, as the first part of the four-note group on *profundis*.
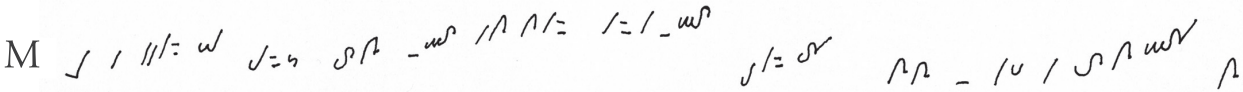
The grammar of the relation between the upward stroke as a higher note and point or dash as a lower note is clearly fundamental in the Autun scribe's work, but it is not always faithfully observed. The basic procedure can be seen in the notation for *domine adiutor meus* from the Introit *Meditatio cordis mei* (Example 26). Here, as the melody moves from a lower note to a higher one, then down again, then up again, and so on, the scribe writes an upward stroke when the note represented is higher than the one before and a dash when the note represented is lower than the one before. This relation was generally maintained when neumes were written in groups, whether in common forms such as that for three rising notes (in *De profundis* at *in orationem*, Example 25), or in longer groups of neumes (*De profundis: clamaui*, where the last two notes are represented by upward strokes rather than dashes).
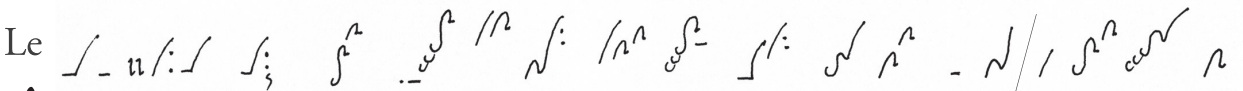
Yet there are moments when that fundamental system seems not to be respected, as in the formulation by the scribe of A of the neume group over *profundis*. For the difference to the S and M notations here is not just a question of the A scribe not using (or being aware) of the joined upward stroke + *oriscus* ('*pressus*') form. The make-up of the group in S and M (point or dash + *pressus* + point) obeys the grammar of a lower note written as a point, followed by a higher note written as an upward stroke, the first element in the joined *pressus* sign; these two notes are followed by an *oriscus*, joined to the upward element, for a note repeated at the same pitch, and finally a point written below. Only the second part of this series of graphs (*oriscus*, point) is found in the notation of A, which has an upward stroke first and then a long horizontal line across the top of this. This same constellation of graphs is written twice again in A, within this tract for the same closing formula (*tui, sustinebit*), as well as in the Tract *Desiderium* (end of verse 1, *eum*, end of verse 2, *dulcedinis*).[14] That is, for the scribe of A, this group of graphs was an established way of writing a cadence typical of the eighth-mode

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[14] This is on the verso side of the endleaf numbered fol. 3, on the recto side of this folded out sheet.

Example 27 *Alleluia V. Dominus regnauit decorem* (S p. 39, M fol. 31v, Le fol. 36v, GN 26).
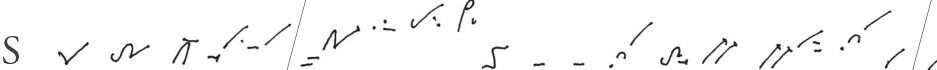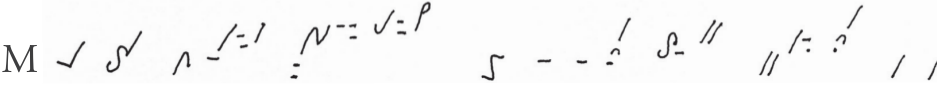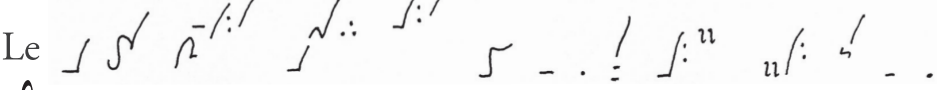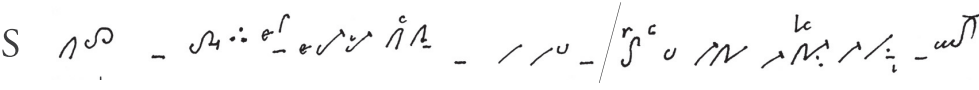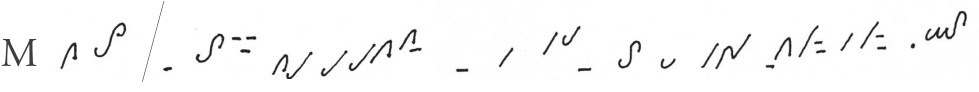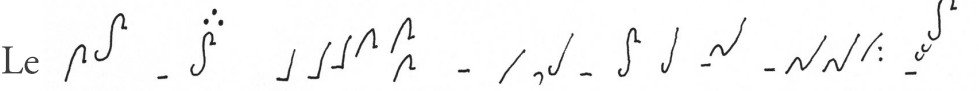
Example 28 From *Alleluia V. Venite benedicti* (Le fol. 40r, Montpellier H.159 fol. 61r).

Al- le- lu- ia

Example 29 Passages from *Alleluia V. Confitemini* (S p. 106, M fol. 165r, Le fol. 40r, GN 159).

Al- le-   lu-   ia   quo-   ni- am in
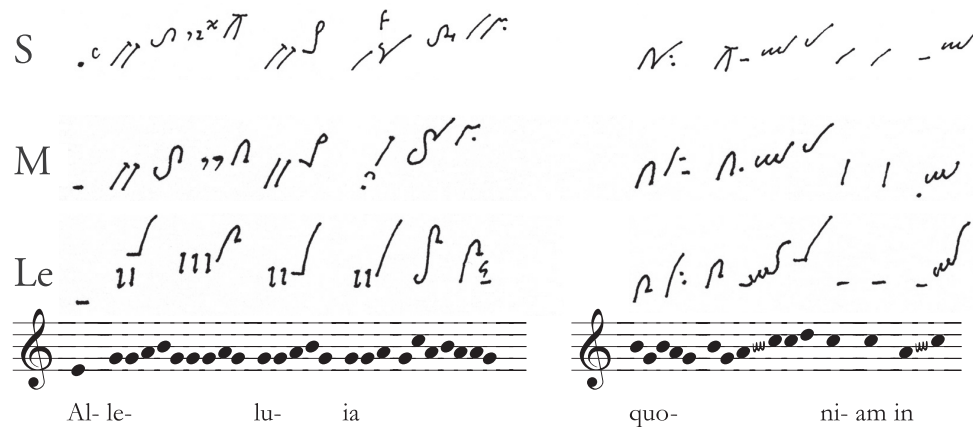
tracts; this was a sign that would by convention be read in one precise way, even if it violates the basic *uirgal punctum* grammar observed elsewhere in this scribe's work.

Further, the possibility of confusion between this way of deploying the upward stroke + dash sequence of neumes and the same sequence written over *exaudi* seems not to have mattered. In one way of writing the neume forms, understanding what was intended depended on a simple iconic reading, whereas in the other, understanding what was intended depended on reading the combination of upward stroke and point through convention, producing a quite different result. In A the 'iconic' series of graphs had become a sign in its own right, to be read in one sweep. Of course, recall of the melody – in this case a melody repeated over and over in the repertory of tracts – will have guided the reader more directly than working out the relation of an upward stroke and a point. What the contrast of these two ways of writing illustrates is the extent to which a notation could absorb behaviours that must have depended on previous, entirely separate ways of writing and understanding music scripts. Even by the early tenth century there was no such thing as a 'pure' script.

The collection of chants as well as music theory and a tonary in a book made in the early tenth century, now Leipzig Rep. I 93 (here Le), must have been a cantor's book: notated

Example 30 Passage from the Tract *Audi filia* (Le fol. 44v, GT 417).
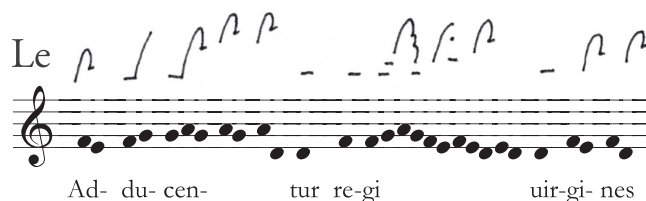
throughout by one hand, it is at least possible that both neumatic notation and text were written by the same scribe. The notation for *Alleluia V. Dominus regnauit decorem* (Example 27) shows this scribe to be willing, like the scribe of A, to write one neume over the top of another (*Alleluia, fortitudinem*); in fact, in this scribe's work the practice of writing neume series along a rising diagonal string is at the steepest angle of any extant examples examined here. On some occasions, space was in such short supply that the scribe wrote a neume underneath the one it follows, as for example in *Alleluia V. Venite benedicti* on fol. 40r (Example 28): here the fourth neume group after *Alleluia*, consisting of two *strophae* (written as short vertical strokes) and a form for two falling notes written directly underneath, is to be read as **cc ca**.[15] The text scribe did leave space between syllables and words, sometimes in a pronounced fashion: for *Alleluia V. Mirabilis dominus* (fol. 42r) the word *dominus* was written with 'do' at the end of a line, 'o' on its own at the beginning of the next line, followed by a space, and then 'minus'. But such spacing out of letters and syllables was avoided as much as possible, probably in order to save parchment, and that restriction forced the neumatic notation into its horizontally most restricted form, resulting in the steep inclination of neume strings and the vertical elongation of individual forms. Some of this writing can only be described as squashed.

As in Autun, in this scribe's work the representation of repeated notes (*strophae*) is in short parallel strokes, although usually with a turn at top and bottom (like a minim stroke in a letter with a turned foot). These same parallel lines also appear where the scribes of S and M wrote two *uirgae* beside each other, as in *Alleluia V. Dominus regnauit decorem* at *Alleluia* and at *induit dominus* (Example 27). At the beginning of *Alleluia V. Confitemini domino* (*Alleluia*) in A, these short lines with turned ends appear four times in quick succession, matching situations in which the scribes of S and M both wrote two *uirgae*, then two *strophae* and then two *uirgae* (Example 29), with a different melodic reading for the fourth case. That same use of just one kind of sign where two different signs are used in S and M can be found repeatedly.[16] In this case then, one West Frankish sign is equivalent to two different East Frankish signs. In this, the scribe of Le differs from the scribe of A, since

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[15] The version of this melody on lines is from Karlheinz Schlager, *Thematischer Katalog der ältesten Alleluia-Melodien aus Handschriften des 10. und 11. Jahrhunderts*, Erlanger Arbeiten zur Musikwissenschaft 2 (Munich: Ricke, 1965), no. 301.

[16] As in *Alleluia V. Dies sanctificatus* (*super*) on fol. 39r.

Figure 24 Leipzig, Universitätsbibliothek, Leihgabe Leipziger Stadtbibliothek Rep. I 93 fol. 39r.

Example 31 Passages from the Responsory *Sanctificamini hodie*, the Antiphons *Habitauit in tabernaculo* and *Adorate dominum* (Le fols. 58r, 61r, 65r, with Einsiedeln SB 611 fols. 15v, 86v and 36r).
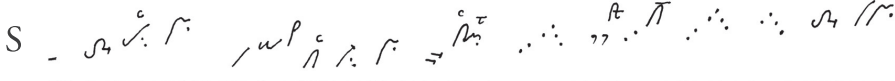
this latter scribe did generally differentiate between these two neume forms, writing the first as short parallel lines (at a perpendicular angle to the line of writing) and the second as double (or triple) *uirgae* (inclined towards the right).[17]
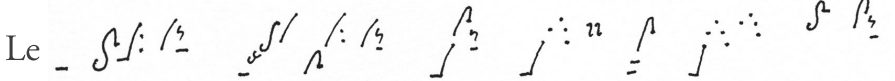
The equivalence between one West Frankish sign and two East Frankish signs is also observable in the neumes for two rising notes, written in an angled form by the scribe of Le, and in both curved and angled forms by the scribes of S and M: at *decorem* all three scribes write an angled shape (Example 27), while at *Dominus* Le has an angled form and S and M have a curved form. Equally, the scribe of Le writes a liquescent *punctum* with a long tail, where the other two scribes write the small curve (*uirtute*). Such variations can be consistently observed.

As in the Autun fragments, the notations in Le do not have the combined *oriscus* neumes so often found in the notations of S and M. That kind of merging of forms is simply not found, whereas the writing of descending notes in continuous strokes, rather than as separate points, is extremely common (again as in A). That these might indicate something different in the manner of delivery from those falling note groups written out in separate strokes is a real possibility: both ways of writing a falling note series can often be found in close proximity, as in the Tract *Audi filia* (at *regi*, Example 30). These joined-up shallow curves, replacing points, may continue directly from the top of the first upward stroke, but they may also be written without being joined to that first stroke: both ways of writing the sign can be seen in *Alleluia V. Crastina die* (Figure 24), with the fully joined form at *Crastina* and the form consisting of one upward stroke and a separate wiggly descending stroke at *Alleluia* and *mundi* (twice). Although it is not possible to compare notations for the same chant in A and Le, it is worth noting that both scribes wrote continuous as well as separated forms for series of descending notes. That these continuous forms are made in quite different graphic fashions may be significant. In A, the pen is pulled back so that the descending line touches the upward element; then having been pulled away from that again, the line followed is parallel to the upward element. In Le, the falling element is never perpendicular to the first, never goes back towards it and is often irregular in appearance; its graphic informality contrasts with that of the form in A. These graphic differences suggest that what the scribes of the two manuscripts shared was not a graphic shape but a procedure; that procedure might merely represent a fast, cursive manner of writing, but it might also indicate

[17] For example, in the Tract *Beatus uir*, in the long melisma on the last syllable of the last word, *seculi* (fol. 3v, recto of folded out sheet, l.16).
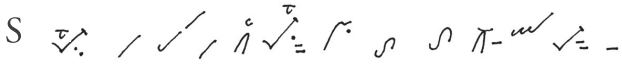
Example 32 *Alleluia V. Domine deus salutis* (S p. 148, Le fol. 37v, G, back pastedown, GT 87).
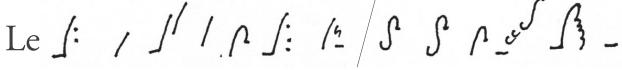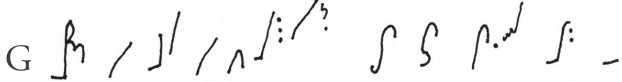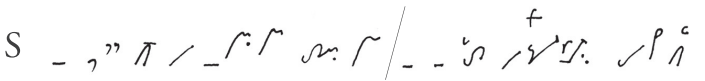
Al- le- lu- ia
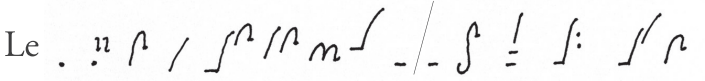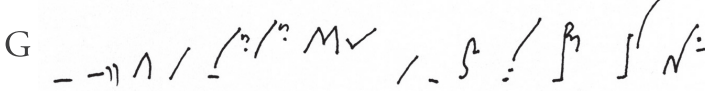


Do- mi-ne de-us sa- lu- tis me- ae

in di- e cla- ma- ui et no- cte co- ram te

that continuous forms encode a different meaning. Although they are rare in his work, there are some looped forms in the work of the scribe of Le (fol. 36v, l.1; fol. 37r l.4; fol. 40v l.18; fol. 48r l.10; fol. 59r, l.10; fol. 67r, l.14). Unfortunately, the number of occasions when these were written is so small that it cannot be determined whether or not they were written to represent a different sound, or merely as a way of writing neume forms without sharp angles.

Example 33 Passages from the Gradual *Domine refugium* (G, back pastedown, GN 322).
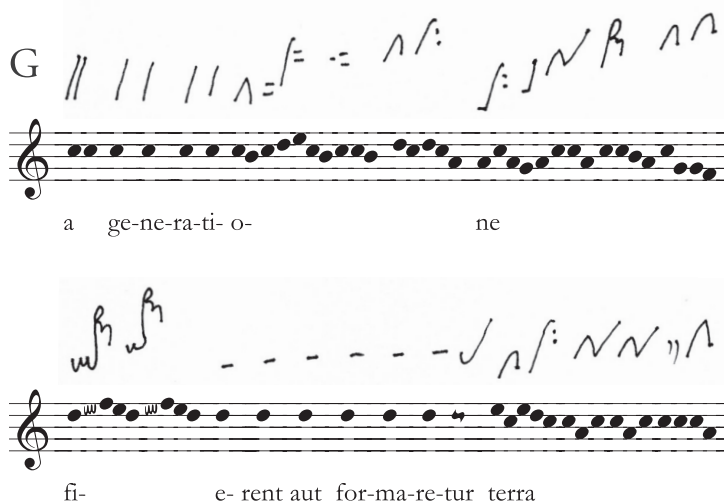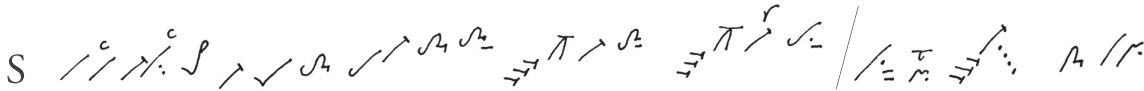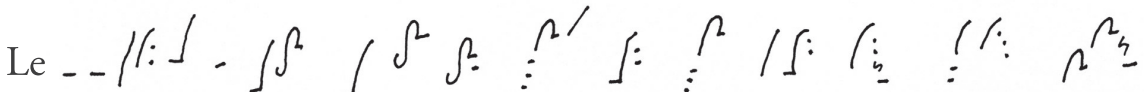
Example 34 Passage from the Offertory *Vir erat* (G, back pastedown, Montpellier H.159 fol. 108r).
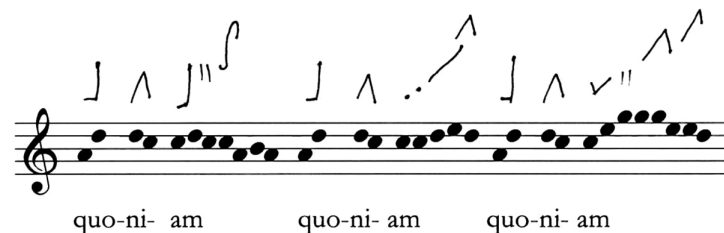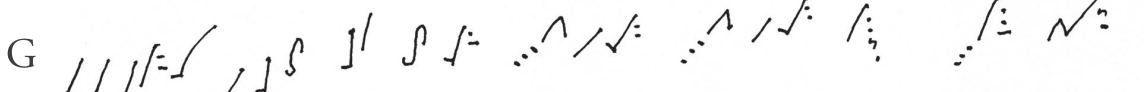
In the work of the Le scribe, the relation between a point or dash (*punctum*) and an upwards stroke (*uirga*) often results in the use of a dash where other scribes write *uirgae*: this can be the result of an assiduous observance of procedures (point or dash after a fall, *uirga* after a rise), as at *quoniam in* in *Alleluia V. Confitemini* (Example 29). Once a melody has reached a specific high pitch, this scribe is inclined to reset the height meter and to start writing points or dashes (Example 27, *induit dominus*). But perhaps the most interesting aspect of his treatment of these single-note neumes are nuances not present in the work of any other scribes considered here: on the one hand, the writing of upward strokes (*uirgae*) of different lengths (Responsory *Sanctificamini hodie*, Antiphon *Habitauit in tabernaculo*, Example 31) and, on the other, the placement of points and dashes at different heights, as in the Antiphon *Adorate dominum* (Example 31). The movement of points/dashes up and down is less common than the writing of upward strokes of different lengths, and these ways of writing are not used very much in the most melismatic chants (the Alleluias and Tracts). Nevertheless, both techniques act to differentiate pitch levels of the notes they represent and reveal a sense

Example 35 Passages from *Alleluia* V. *Deus iudex* (S p. 145, Le fols. 37v–38r, G, back pastedown, GN 259).

Al-le-lu-   ia

De-us iu- dex iu-   stus

Example 36 Graphs for two falling notes in G.

Example 37 The opening of the Introit *In uoluntate tua* (G, back pastedown, GN 335).

In uo- lun-ta- te tu- a do-mi- ne u- ni-uer-sa sunt po- si-   ta

Example 38 Passage from the Communion *Comedite pinguia* (G, front pastedown, GT 268).

san-ctus e-nim di-es do-mi-ni est
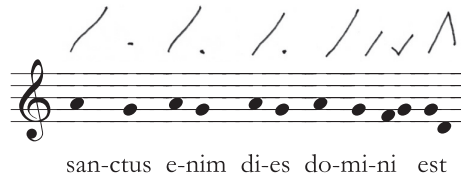
Example 39 The opening of the Communion *In salutari tuo* (G, back pastedown, GT 350).

In sa- lu- ta- ri tu-o a- ni-ma me- a

in this scribe's mind of the direct relation between melodic movement and height on the page, causing him to go beyond the standard procedures for this kind of script.

Even more scrappy than the Autun fragments, parts of two folios from a gradual made circa 900 in western Francia survive as pastedowns in a manuscript now in Graz (Universitätsbibliothek 748, here G). The script used for the notations on these scraps is very similar to that of Le, and they share parts of two Alleluias, which can be directly compared (*Alleluia V. Deus iudex, Alleluia V. Domine deus salutis*). The amount of interlinear space in the layout of G is rather greater than in Le (11.5 mm compared to 7.5 mm), affording the music scribe more opportunity to write clearly without pushing neumes very close together. While this scribe's neume series move upwards to the right (back pastedown, l.8, *nobis, generatione, generatione*, Figure 10 and Example 33), he was inclined – like the scribe of M – not to move down to a point just above the text at the beginning of each syllable but to work through longer passages: for the five syllables of *Domine deus* (back pastedown, l.4) he simply kept going up, neume by neume, even though the last group on *deus* drops down in pitch (Example 32). Even when writing a series of short dashes for notes sung at the same pitch on *fierent aut formaretur*, their height above the text rises (back pastedown, l.9, Figure 10 and Example 33). It is very probable that these groups of neumes represent passages of notation written by the scribe before lifting his hand away from the parchment and considering the next section; although his awareness of the practice of returning to just above the text for each new syllable is evident – as for 'quoniam quoniam quoniam' (back pastedown, l.17, and Example 34) – he did not observe it very faithfully.[18]

[18] On the diversity of melodic readings in early pitched sources of the Offertory *Vir erat*, see Rebecca Maloy, *Inside the Offertory: Aspects of Chronology and Transmission* (Oxford University Press, 2010), 369–81: the version written out in Montpellier H.159 is a good match for the neumes of G.

As in both A and Le, the script written in G does not include joined *oriscus* forms: this stands out when juxtaposed with notations from S, as in *Alleluia V. Domine deus*, at *deus, clamaui* and *nocte* (Example 32). Again, as in A and Le, G has the angled but not the curved form for two rising notes: this is written where the scribe of S uses both forms (*Alleluia, Deus*, Example 35).

While the ways of writing neumes in these Graz scraps are close to those of Le, above all in their tall elongated forms, there are important differences. A neume for two falling notes can be written in several ways and in smaller and larger sizes: the forms move from one with a sharp angle at the top, to a form with a curve at the top and legs of equal length, to a form that has a longer rising than falling element (Example 36). At its largest, this neume can be more than three times the size of a small version (back pastedown, l.11, at the end of the group on *terra*, followed immediately on *terra* by a small example of the same neume). Written three times in the fourth verse of the Offertory *Vir erat* (back pastedown, l.18, Figure 10), it is unclear whether or not the large neume represents some sort of liquescent form. The upward stroke is written at varying angles of inclination to the writing line: when written on its own it is often steeply inclined, but when used in combination with other neumes in a melisma, it is often written less inclined: examples of both can be seen in close proximity over *et patiens* (back pastedown, l.10), with a single upward stroke over *patiens* and an upward stroke as the last part of a group over *patiens*. Short repeated notes are written as combinations of a dash and short curved lines (longer than commas), or as groups of short lines curved around one another, with each successive stroke written longer. The form with a dash is written when the first note is lower than the two succeeding (back pastedown l.4, *in die*, Example 32), and as three curves when the notes are at the same pitch (back pastedown, l.6, *domine uniuersa sunt*, Example 37). The *trigon* is written as an upside down triangle, with two dots above and one below (back pastedown, l.14, many examples).

Like the notations in A and Le, those in G also include continuous forms for descending series of notes. The main difference is that the scribe of G pulls the descending element back to touch the upward element, before following descending curves: this can be compared with the form in Le at *iustus* (*Alleluia V. Deus iudex*, Example 35). More confusing is the fact that this continuous form is often used by the scribe of G where the scribe of Le does not use it, and vice versa: in the Graz fragment it is written in *Alleluia V. Domine deus salutis* at *Domine* and *coram* (back pastedown, l.4, Figure 10 and Example 32), but not in Le, while it is written in Le at *meae*, and not in G. This sample is much too small to allow any determination as to the use and potential meaning of these cursive forms, but it is clear that the scribe of G also used two ways of writing series of falling notes.

As with his placing of neumes, this scribe could be lazy in his use of the point/upward stroke relation: his basic understanding of this way of differentiating pitch levels is clear in a passage from the Communion *Comedite pinguia* (Example 38, from the front pastedown, l.16): here the succession upward stroke/point is repeated three times for the movement down–up–down–up–down. In the notation of the Communion *In salutari tuo*, however, a series of six strokes for six syllables (*salutari tuo anima*) appears to denote a series of notes moving up and down and up (back pastedown, l.19, Figure 10 and Example 39). Here the

choice of an upward stroke for the first neume in the series may have been determined by the lower pitch for the preceding syllable (*salutari*); nevertheless the fall to *anima* with a following rise certainly merited the use of a point or dash.[19] Of considerable interest here, however, is this scribe's rejection of the standard point/stroke procedure and his use instead of placement and length of stroke to indicate changes of pitch: his long strokes respond to the movement upward and down in a very clear way, reaching higher for the move up to **G** and lower for the move down to **E**. In other cases, successions of unchanged forms indicate syllables sung at the same pitch, as in the Gradual *Domine refugium* at *a generatione* and *formaretur* (back pastedown, ll. 8–9, Figure 10 and Example 33).

5.3 FRANKISH SCRIPTS (WEST, EAST AND ITALIAN)

The notations in five separate manuscripts of Western and Eastern Frankish origin just discussed have three shared fundamental elements. First, a basic dependence on a pair of signs (point/dash and upward stroke) that are understood in relation to each other (to indicate movement up and down at specific moments, from one syllable to another, as well as within neume groups). (For the sake of brevity, the upward stroke will from now on be referred to as the *uirga*.) The second shared element depends directly on this first, since it could not have been used successfully without it: this is a way of writing out successive neumes, so that they lead in a diagonal string moving upwards, whatever the intervallic relation of the notes thus represented. Finally, these notations share a further repertory of basic signs. Variations in the way each of these elements is worked out can be observed in the work of individual scribes. In the matter of choosing whether to write a point or a *uirga* at specific moments, individual scribes made different decisions, sometimes building more, sometimes less clarity into their notations. Similarly, several ways of setting out neumes in relation to horizontal and vertical axes of interlinear space can be discovered in the work of these five scribes: from the extremes adopted by the scribe of Le as a result of restricted available space and the need to use any empty corner – so that successive neumes could be written not only above each other (his normal practice) but also below (much less often) – to the relatively unrigid diagonals of the scribes of M and G, who could both continue the line of upward movement from one syllable within a word to another, and finally to the control of the scribe of S, with neumes laid out in a generous space, almost always following a habit of returning to a specific vertical level for each new syllable and thus seldom leaving ambiguity about the relation between neumes and individual syllables. It is clear that these scribes all understood that the space above the text could be used in two ways: their main procedure was simply to write out neumes in more or less continuous strings – beginning

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[19] No contemporary notations of this communion, written in this script type, are available for comparison; in later manuscripts from both West and East (Mont Renaud, *PM* 16, fol. 42v; Einsiedeln 121, *PM* 4, p. 339), a point or dash is written for this syllable.

from a position just above the text at the beginning of a syllable if at all possible, but it was also possible, especially when writing out single neumes for single syllables, to exploit the relation between vertical height and intervallic distances. Awareness of this is obvious in the work of all the scribes, but it is above all in the work of the scribes of S and Le that this relation is put to good use. That in both cases we are dealing with specialist books – probably made by and certainly for cantors – is therefore worthy of note.

The point/*uirga* contrast and the laying out of neumes in continuous strings are inter-linked basic procedures for writing neumes: if the layout of neumes followed this string-like behaviour, whether it be in straight or curved lines, then the possibility of indicating movement of pitch up or down through a conventionally understood contrast of two signs was enormously useful. What underlay these fundamental principles will be considered in the next part of this book. Aside from the lengthening and shortening of *uirgae* strokes by the scribe of Le, it cannot be said that there is evidence of development of these procedures in the examples examined, merely different habits for their utilization. The information that can be drawn from individual signs in these various Frankish notations –in terms of both the shape of individual forms and the range of sign repertories for similar musical gestures – is rather different: here there is certainly evidence of different historical layers and of develop-ments in different regions and institutions. That evidence includes the degree to which signs for specific musical gestures are fixed, the elaboration of the sign repertory, calligraphic stylization and discipline in the writing of the script.

In a general sense, the mere fact that a specific chant could be written out differently by scribes using the same script speaks immediately to a lack of concreteness at this most worked-out level, the notation of Proper chants of the mass. It is not simple differences, such as the forms for two rising notes, with which this interpretation of the evidence should begin, however, but with the variation in the work of individual scribes. In the work of the scribe of A, for example, the possibility of writing an identical musical gesture in two quite distinct ways, without any evidence of differences of meaning, has been observed in forms for four falling notes. Yet even for a neume for three falling notes, all the West Frankish examples appeared to use continuous and separated forms indiscriminately, in terms of meaning; at least no consistency of practice across these examples or in their juxtaposition with S and M has been observed. Were there space and time to follow up more cases of use of the three- and four-note neumes in all these notations, it is likely that more examples of this kind would emerge. The point here is that, through these instances, we can perceive (even if dimly) a situation in which there were fewer established conventions for writing out a specific musical gesture, and more cases of the design of new forms by individual scribes as they wrote out individual chants. Many of those newly fashioned forms will have very quickly become habitual and thus more fixed.

In comparing the different forms for similar signs and also different signs written in these five Frankish notations, the results of a process of change from fewer to a greater number of fixed neumes is evident over and over again. The presence of two differentiated forms for

representing two rising notes in the East Frankish and Italian notations, compared to just one in the West Frankish notations, is just the most tangible case; and the fact that the curved form for two rising notes *never* appears in the West Frankish notations suggests that the script adopted in both West and East did not have that form but that someone in the East or in northern Italy created it in order to show shorter and longer ways of singing that gesture after the first dissemination of the script. This then caused the sign for a single note sung as a rising liquescent gesture to be limited to a small rather than an extended curve. That modification must have been made early enough in the process of dissemination of the script for the new sign and its new form eventually to become known across a very wide area. A similar account could be made of the habit of writing three falling notes in a cursive form in West Frankish notations: these are not present in the East or in Italy.

A further development in the East Frankish scripts was the creation of signs in which the *oriscus* was joined to a *uirga* (before or after), creating the *uirga strata* (*uirga + oriscus*) and *pes quassus* (*oriscus + uirga*). These were special two-note neumes that incorporated pitch information related to the preceding or following neume. Building on this base, new signs for three notes could be made: the *pressus* in which a *uirga* joined to an *oriscus* is followed by a point, and the *pressus maior* in which this basic form has a added short stroke on the left, indicating length/emphasis. Apart from this last form, which has incorporated the procedure of adding a short stroke (*episema*) to extend meaning, none of these new signs changes meaning; rather, they represent calligraphically determined decisions, allowing the joining of forms previously written separately. None of these combined forms appear in the West Frankish notations. Some either are not present or are very infrequent in the notations in M. It is clear that this whole series of combined forms that incorporate the *oriscus* – a sign indicating a repeated pitch – do not belong to the foundational layers of the script, but must have been designed after the initial dissemination of the script to West and East. Against these examples that characterize scripts across large geographical areas, the procedure of adding a short stroke to indicate greater length or emphasis (*episema*) is extremely limited and may have been initiated rather late in this developmental phase. It is entirely possible (but hardly provable) that this procedure was invented at Sankt Gallen and never used very far from that establishment. This observable transformation of the Frankish script, from a way of writing sounds according to a number of basic principles, to one in which the sign repertory had been considerably elaborated both in graphic terms and to represent extended meanings, demonstrates an active process of development and change before the end of the ninth century.

Another quite separate force brought to bear on the basic elements of the Frankish script – graphic discipline and stylization – was surely the result of its integration into the script practices of communities and of perceptions of the status and value of music writing. Those ways in which individual signs were written were surely dependent on the graphic abilities and intentions of individual scribes. Nevertheless, those individual scribes could not simply be free agents: they had to convey whatever they believed to be the

Example 40 Graphs for two falling notes in S, M, Le, A, G.

S

M

Le

A

G

essence of the neume form in order to communicate meaning successfully. For some neumes, such as *strophae*, there was a wide range of ways of writing them, all recognizable since these are the smallest signs (apart from the point and the horizontal dash) and never appear singly, but always in groups of two or more separate strokes. The range of ways of writing *strophae* stretches from the simple parallel strokes written by the scribe of A, through the parallel strokes with turned ends written by the scribe of Le, to the thin curved lines written by the scribe of G and finally the commas written by the scribes of M and S. Evidently some of these are more carefully shaped than others, but little more can be said about earlier and later shapes. Comparison of the forms for two falling notes written by these five scribes provides more interesting insights into their perceptions about how a script could be handled (see Example 40). One of the two main ways of writing the neume is with a longer upward than downward element (M, Le, A, G); the other is with upward and downward strokes of equal length (S, M, Le). Mostly, the form is rounded at the top, but it can become sharper, as in the work of the scribe of G to an extreme degree. A third aspect is the way the pen is taken off at the end of the stroke: this can leave a pronounced 'foot', as in the work of the scribe of A; a shorter but nevertheless visible turn, as in the work of the scribe of Le; or no turn at all. It is clear that it was at any time possible to write this neume in two ways, without changing its meaning: in the work of three of the five scribes the more common shape with a longer upward than downward element sits beside the shape with strokes of equal lengths. Only the scribe of S did not write the first of these, while the scribe of A did not write the second. In M the second form is rarely used when set on its own, but occurs often within the context of other neumes within melismas. In other words, its use may result from specific graphic contexts, when other neumes immediately before and after affected the way the scribe guided his hand.

So much for different but equivalent neume shapes. It is the degree of variation within the writing of any one individual scribe that is the most interesting aspect, however: this can

fluctuate from little variation (A, M), to more variation (Le) and to so much variation that few signs actually directly match each other (G). For all these scribes – leaving aside the scribe of S – these ways of writing the neume were directly equivalent, part of a range of graphic possibilities: for the scribe of G that range was very pronounced. The incorporation of a foot or short turn at the end of the graph belongs in a different part of the assessment of calligraphic variability: in the work of two scribes (A, Le), such a feature was *always* present, and in the work of two others (S, M), it was *never* present. Thus the presence or absence of this feature represents the way in which scribes deliberately shaped their signs: the fact that the scribe of G wrote both ways seems to be part of the licence he granted himself to write in a less controlled way than any of the others. But it is a graphic feature, not an aspect of meaning.

Only in the work of one scribe is there effectively no graphic variation at all, since in that scribe's work the presence of two different shapes is the result of extended meaning: the scribe of S used one shape, always written the same way (with equal legs), as his standard sign, and another (with the right-hand leg pulled lower) in order to amplify the meaning 'two falling notes', to include pitch information about the second note. When the range of shapes of neumes for two falling notes written by the scribe of S is expanded to include in the examination those with added strokes and with added significative letters, the disparity between the work of the G and S scribes can be seen to be extremely pronounced: from graphical variety without meaning to graphical variety *with* meaning. This was the reason why the S scribe's work was so controlled, since to write any part of the neume form in a different way was intended to lead the reader to read it in a different way: a turn at the end of a stroke could be part of a rhythmic indication and was thus avoided unless intended (and then made very clear). Two different basic shapes of the neume were used with intent, the second with the longer falling stroke rendered more clear through its iconic shape. These various ways of writing neumes for two falling notes therefore reveal in the notations from which they are drawn a range of attitudes to writing neumes, from less controlled writing that is less imbued with meaning, through more graphically controlled writing that does not necessarily have greater content, to extremely controlled writing, allowing extension of layers of meaning.

This is evidence not only of different degrees of interest in the tying down of more aspects of sound in writing but also of discipline in the work of individual scribes in order to support that enterprise. There remains one aspect of calligraphy in these notations that is not linked to meaning at all. Under the heading 'stylization' we might set characteristics of a kind that have been little noticed here and about which more information should be collected through study across the range of extant sources material. Nevertheless, the fact of different rising and falling axes in the basic neume set is only the most apparent such characteristic: among these Frankish scripts the angles of axes may range from mainly perpendicular to the writing line for up and down strokes, as in the West Frankish examples, to the slanting upward and almost perpendicular downward axes of the East Frankish and Italian examples. In other

words, this represents another convention adopted in these different regions fairly early on; as with the sign repertories, a more general custom could then be adapted, effectively to become an aspect of institutional identity.

Finally, something should be said about the Old Hispanic notations. There are at least three early manuscript sources in question here, including notations for *versus* probably written very early in the ninth century (BNF lat. 8093), and notations for ecclesiastical chant in fragments datable to the late ninth century (BNF nal. 2199, fols. 14–16): to these can be added the evidence of a large antiphoner in León, made in the first quarter of the tenth century (León 8). In the notations of the fragments and León antiphoner, many of the forms and procedures are so similar to those in Frankish examples already considered that there can be no doubt about their basis in a Frankish script. Yet in these notations, the number of new forms not present anywhere else is so great that it is clear that we are dealing with a very specific, geographically defined development of the inherited script. Since pitched versions of the melodies notated are not available, it is difficult to work out meanings for many of these new forms and to determine which have pitch content and which are dealing with length and/or articulation. Further study of these notations will surely clarify and perhaps provide answers to some of these questions.[20] These Old Hispanic notations illustrate the extent to which fundamentals elements of a script, including principles for layout on the page and the formation of basic signs, could be calligraphically extended and refined to create a highly individual way of writing music, and this before a hundred years had elapsed since the creation of the script system.

Read as Frankish, the notations for five *versus* in the song collection now divided between Paris and Leiden (Leiden BPL Voss. lat. 111) need not be described as written in two types of script ('Visigothic' on fols. 18v, 24r, and 'French' on fols. 17r, 18r, 24v).[21] That sense of difference depends on the comparison of these early notations with models that were all written much later, as well as ignoring the basis of two regional notation types in one script. Some of the notations written here are so simple in content that they do not need forms that set them apart from other Frankish scripts. Nevertheless, in the notation for *O mors omniuorax* (Figure 13) there are several neume forms which can only otherwise be seen in Old Hispanic notations, and these deserve close study. That these notations were written by Visigothic hands in Lyon is beyond doubt.

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[20] On a current project including study of notations in the León antiphoner, see p. 118 above.

[21] Corbin, *Die Neumen*, 176.

6

Lotharingian and Breton Scripts

Taking the next step in this series of comparisons of early neumatic notations is more difficult methodologically: from this point on the notations to be compared are not as graphically similar as those of the Frankish family of scripts but relatively distinct. This has necessitated their being named as separate scripts. Although the Lotharingian and Breton scripts are self-evidently related, neither has its origins in the other. Both must have been developed from a common ancestor and then been the subject of many scribal innovations before the moment when we can see them in manuscripts made in the late ninth and early tenth centuries. In teasing out information about what these scripts have in common and in what ways they differ, it will be necessary to separate layers of the examination – the placing of signs in the space above the text, the use of specific forms to indicate specific melodic gestures and the sign repertories themselves – from one another. While procedures, sign repertories, sign forms and layout are all interdependent, those ways in which that interdependence is resolved may change from one script to another and from one scribe's work to another.

In the following discussion, the Lotharingian and Breton scripts will be considered first, before Palaeofrankish script. I have omitted Aquitanian notations from this discussion entirely: there are too few early examples to make a comparison with the other scripts, although certainly much could still be achieved through study of the notations in Albi 44.[1] Finally, the script written at the Benedictine abbey of Nonantola since at least the early tenth century – and possibly before – is a source of much interest in the context of the current examination of ninth-century scripts. It offers the only example of a script designed and in use in one identifiable institution, and probably therefore observable in the state in which it was devised. In terms of design, this is a script that merits and will richly repay study.[2] As with Aquitanian script, however, the early examples are quite limited.

The Lotharingian and Breton notations are both found in manuscripts dated well within the ninth century: the Breton already in the second quarter of the ninth century, and the

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[1] On these notations see Colette, 'Le Graduel-antiphonaire, Albi, Bibliothèque municipale, 44'.

[2] For a detailed study of one of the earliest manuscripts with such notations, see Varelli, *Musical Notation*.

Lotharingian by the last quarter, at the latest. At the point at which we can examine notations for Proper chants of the mass, these two scripts share some procedures and neume forms: their relation was epitomized by Dom Beyssac in the first published study of the notation of C when he described these two notations as 'descending from a common source'.[3] A first point of comparison will be those ways in which the space above the text is used by a scribe writing Breton script and by a scribe writing Lotharingian script. Two chants of different kinds, written one after the other in the two notated graduals La and C, will be examined: the first is an introit, in which many syllables are sung to single notes and in which there are few melismas, while the second is a gradual, full of long melismatic passages.

6.1 placement of neumes in the interlinear space

In the notation for *Ego autem* written out in La (Figure 25 and Example 41), neumes are moved up and down in the space above the text following melodic direction: leaving aside the opening *Ego*, the neumes stay on one level, then on the syllable *iustitia* the first element in a four-note neume is on the same level as the preceding notes, but the two dots and a dash that follow are written higher up the page – in the pitched version, the melody moves up a third at the same point. Immediately afterwards, the neume above *iustitia* begins at a lower level, the same as for the first element of the neume over the previous syllable; in the pitched version
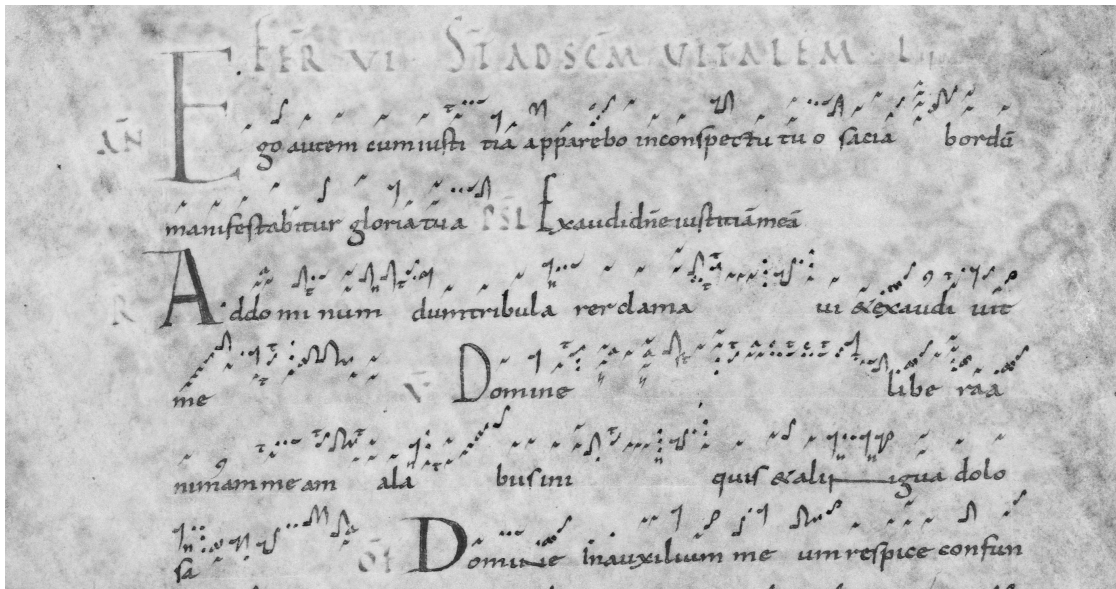
Figure 25 Introit *Ego autem*, Ville de Laon, Bibliothèque municipale ms 239, fol. 29v.

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[3] 'Et, de fait, si elle ne dérive pas de celle de Metz, toutes deux descendent d'une commune source.' Beyssac, 'Une troisième notation rythmique', 17.

Example 41 Introit *Ego autem* (M fol. 72v, C fol. 20v, La fol. 29v, GT 94).

E- go au-tem cum ius-ti- ti- a ap- pa-re- bo in con-spe- ctu tu- o

sa- ti- a- bor dum ma-ni-fe-sta-bi-tur glo- ri- a tu- a

these are at the same pitch (**a**). Then the neume for the next syllable is set lower again (**G** in the pitched version). This movement of neumes up and down the page does not convey precise information about intervals and does not attempt to chart relative pitch levels beyond immediate contexts. What it can achieve, and what it does not try to achieve, can be quickly appreciated through comparison of neumes for the opening three syllables *Ego autem* and those for *manifestabitur gloria*. In the pitched version both of these passages oscillate within the third between **F** and **a**: the first moves **F Ga a**, and the second **F Ga a GF F**. On the first occasion, the scribe did not set the third neume at the height of the end of the previous neume, whereas on the second occasion he did. The second passage is written in such a way as to allow the reader to discern three pitch levels: but those pitch levels are only read through movement from one neume to the next, and not as a result of the establishment of a relation between specific vertical levels and specific pitches. At *manifestabitur*, for example, the neume is written higher than those preceding, even though it represents a note sung at the same pitch:

Example 42 Passages from the Tract *Qui confidunt* (Laon 266 fol. Av, La fol. 34v, GT 109).
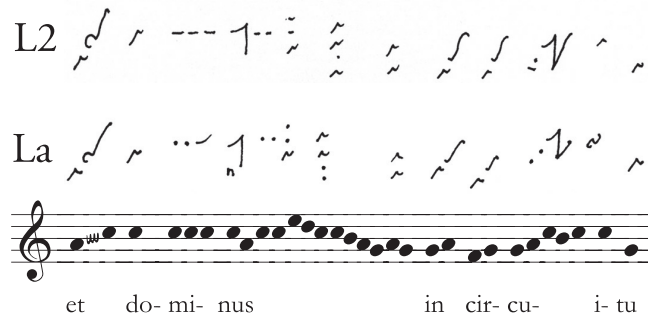
the scribe's movement upward was forced by the ascender of the letter f below. Then the steps from *manifesta*<u>*bitur*</u> to *manifesta*<u>*bitur*</u> are easily read (but could, of course, have represented steps larger than a tone each). This illustrates both the possibilities and the limitations of the placing of neumes at different heights: the scribe was thinking from one moment to the next as he wrote, and conceptualized his treatment of the space above the text primarily in terms of movement towards different pitch levels more than stasis on different pitch levels. The point here is that, in this situation of supporting an oral record, he did not need to rely on the placement to represent pitch exactly, and, when writing out the beginning of the chant, he was conscious of the need to write neumes at higher levels. A neume such as that over *appa*<u>*rebo*</u> would probably have run into the line of text above if he had not been so careful; more generally, the line of neumes would have become quite detached from the line of text. Therefore his movement up the page was constrained here in a way in which it was not once he got close to the end of the chant. Indeed, towards the end, he needed to write neumes at lower levels and had to adjust his hand between *glori*<u>*a*</u> and <u>*tua*</u>, sung to the same pitch.

It is possible to assess the extent to which this treatment of neume placement depended on the habits of one scribe or was typical of a way of using this specific script through comparison with other ninth-century notations written in this same script. A bifolium now bound into Laon Bibliothèque municipale 266 is notated in a script of the same type as that written in La: without being able to date the fragment precisely, Bischoff set it into the last quarter of the ninth century and allowed that it might predate La.[4] The notations for the Tract *Qui confidunt* in this fragment and in La allow a direct comparison of scribal habits and possibilities offered by this script. The general habits of the scribe of the Laon 266 fragment are extremely close to those of the La scribe: neumes, including those within melismas, are moved up and down, generally following melodic direction – although this is not always possible when long ascending or descending groups are involved. In the placing of the last three note groups (nine notes) at the end of *domi*<u>*nus*</u> – where the melody falls through

[4] See above, p. 89 n. 55.
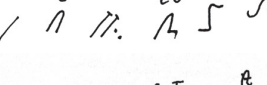
Example 43 Passages from the Gradual *Ad dominum* (S p. 74, M fol. 73r, C fol. 20v, La fol. 29v, GN 252).

Ad do- mi- num   dum tri-bu- la-   rer cla-ma-   ui
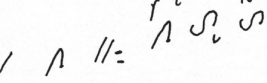
et ex- au- di-   uit me
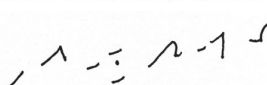
a sixth from **e** to **G** – the sign representing **c** at the beginning of the second of these groups is written a good distance above the level of the bottom sign of the previous note group (also representing **c**) (Example 42). This also happens in the notation of La. It is worth noting, however, that the scribe of La is sometimes inclined to place and shape his neumes to provide a little more precision about relative pitch than the scribe of Laon 266: this can be seen at the second *in circuitu* passage. Where the Laon 266 scribe writes two similar neumes at the same level for the rising motion on each syllable, the scribe of La writes the second neume lower than the first, representing the transfer to pitches a tone below (**Ga, FG**).
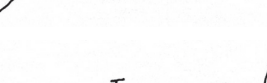
In the notation for the Gradual *Ad dominum*, the scribe of La adopted the same practices, moving neumes up and down the page, and adjusting their level where necessary, in order to
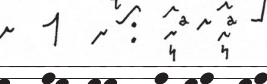
Example 43 (cont.)

fit everything in. The contrast between his approach and that of a scribe writing in a Frankish script can be seen at *a labiis* (Example 43). From the beginning of the melisma the scribe of M wrote his neumes in a rising string, whatever the pitch relation to preceding and succeeding groups of notes. The scribe of La kept the neumes for the first seven notes of *labiis* in the lower part of the space above the text, the seventh note written at the lowest level (corresponding to the lowest pitch, **F**), and only allowed his line of neumes to ascend once the pitch began to rise inexorably, from the seventh note onwards. There is thus no evidence here of the behaviour encountered in the Frankish notations of writing in rising strings, usually diagonally across the page, and there is no attempt to bring the first neume for each syllable down to a set level above the text.
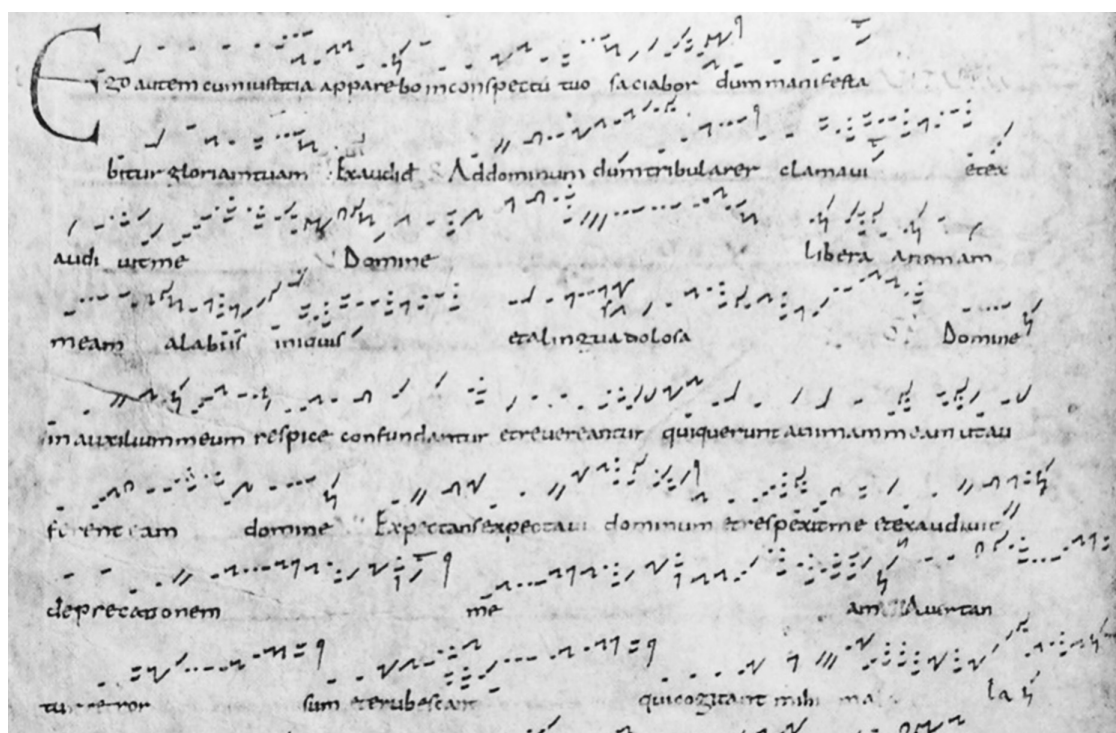
Figure 26 Introit *Ego autem*, Chartres, Bibliothèque municipale ms 47, fol. 20v.

Notation for the Introit *Ego autem* in C shows yet another attitude to the placement and choice of signs (Figure 26 and Example 41). This scribe wrote his neumes in a size that is quite compact and in shapes that are less vertically elongated than the La scribe's neumes. Like this latter, the scribe of C was clearly interested in using the space over the text to indicate higher and lower pitch levels, for as long as he could maintain the direction of a melodic line. At the beginning of the chant, he managed to keep the neumes across seven syllables (*Ego autem in iustitia*) in a direct relation to pitch (**F Ga a a a a accc**), then he was constrained by a lack of space in the horizontal dimension and had to write the neumes for *iustitia* immediately below the high group for the middle syllable of that word. From this new beginning he was then able to move up and down the page in conformity with melodic direction until he reached the low ending of the phrase (*in conspectu tuo*), where he was forced to abandon the rough relation between vertical positioning and pitches. Here the inclination of his neumes became more pronounced, allowing more space above the text; whether that was merely as a result of the movement of his hand, or a conscious choice in order to maintain continuity, is impossible to tell. At the end of the longest melisma in the chant, on *satiabor*, he was forced to use another technique: the text scribe had not left space after this one syllable, continuing immediately to the last. This meant that the neume for the last syllable of the word had to be written underneath the melisma, as close as it could be got to the syllable. But the

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two-note descending group for *satiabor* began on the same pitch at which the melisma for the previous syllable had ended, and this aspect of melodic movement was entirely obscured by the placement of the neumes. In order then to associate the pitches at the end of the melisma on the third syllable and at the beginning of the fourth syllable, the scribe wrote 'q' for *equaliter*, guiding the reader towards their direct relation.

Unexpectedly, the way in which neumes are placed for notation of the Gradual *Ad dominum* immediately following the Introit *Ego autem* is, in parts, quite different in procedure: some passages of neumes are written in strings that move diagonally upwards, whatever their pitch relation, exactly as would a Frankish notation. Over the first five words of the chant, both approaches to the placing of neumes can be seen. For the first two, *Ad dominum*, the neumes move diagonally upwards: in a pitched version, this passage recites around one tone (**F**), falling at the end to **C** a fourth below (Example 43). Then, for *dum tribularer*, the scribe re-started at the lowest level he could, allowing the neumes to follow an upward diagonal again; when they got too high to continue, he used the corrective sign q ('equaliter'), to show the relation between neumes for the last two syllables of *tribularer*. In a pitched version this passage rises, from **F** to **c**. Then, for the long melisma on *clamaui*, he attempted to keep successive neumes within the same vertical range, rather than moving upwards; here, critically, there was more space available, admittedly after the word, rather than within it.

An interesting point for comparison is *Domine*, where, following a fall through four notes, the melody repeats one pitch (**a**) three times in three groups: in the Frankish notations of S and M, the *uirgae* representing the first three of these repeated notes are written following the upward diagonal direction already established (Example 43).[5] But in the notation in C, the scribe came down: he used *uirgae* to show the rise from the last note of the falling pattern, but wrote these neumes at the lowest level of the preceding falling group and not continuing at the high level of this previous neume. At this same point the scribe of La set the repeated notes at the same vertical level as the third of the four falling notes (**dcbG**), evidently the closest match he could make for the **a** groups.
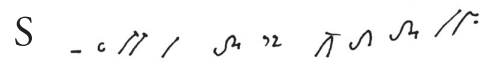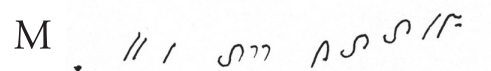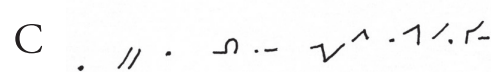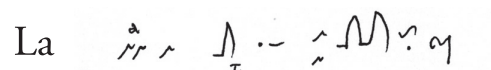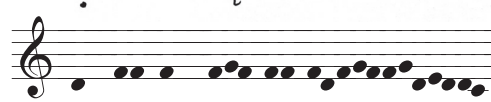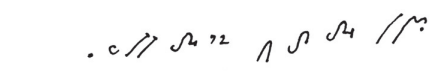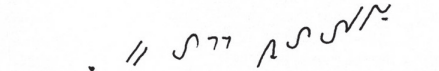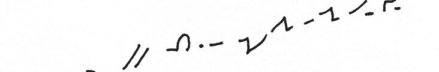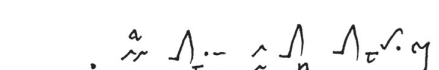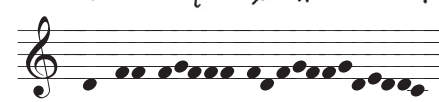
The Gradual *Ad dominum* belongs to the large family of fifth-mode graduals, and it is therefore possible to find several parallel notations for individual parts of the melody in other parts of each book. In Example 44 the notations for the initial phrases of each of three graduals in each of four books are set out.[6] Each of these phrases begins on the low **D** (*Protector noster, Ad dominum*) or **F** (*Bonum est confiteri*), and all finish with stepwise descents to **C**. In S, M and C, notation for the first two graduals begins very low, and in the case of *Bonum est confiteri* at the lowest level generally written by the scribe; then, in the melisma on the last text syllable, the neumes rise gently upwards. The scribe of La is the only one to write in a more horizontal fashion, with the
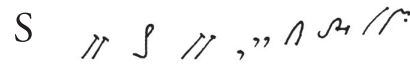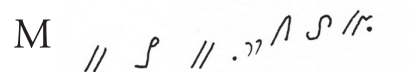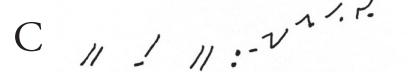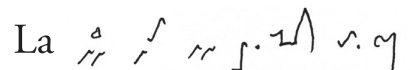
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[5] In S the 'x' written after the first *uirga* stands for '*expectare*', and hence has no relation to pitch.

[6] In the order *Protector noster, Ad dominum, Bonum est*: S pp. 67, 74; M fols. 64r, 73r, 75v; C fols. 15v, 20v; La fols. 22r, 29v, 30r; GN 268, 252, 253.

Example 44 Incipits of the Graduals *Protector noster, Ad dominum, Bonum est* (S, M, C, La, GN).

Pro-te- ctor no- ster

Ad do- mi- num

Bo- num est

descending stroke of the last neume (for two falling notes) coming down to the same level as his starting point.

We must therefore recognize that the scribe of La was working with an idea of how to place his neumes that was different from the practice of those scribes writing Frankish script, *and* that the scribe of C was also familiar with that approach and mixed it with the Frankish diagonal strings when space forced him to abandon his more usual practice. Indeed, there are
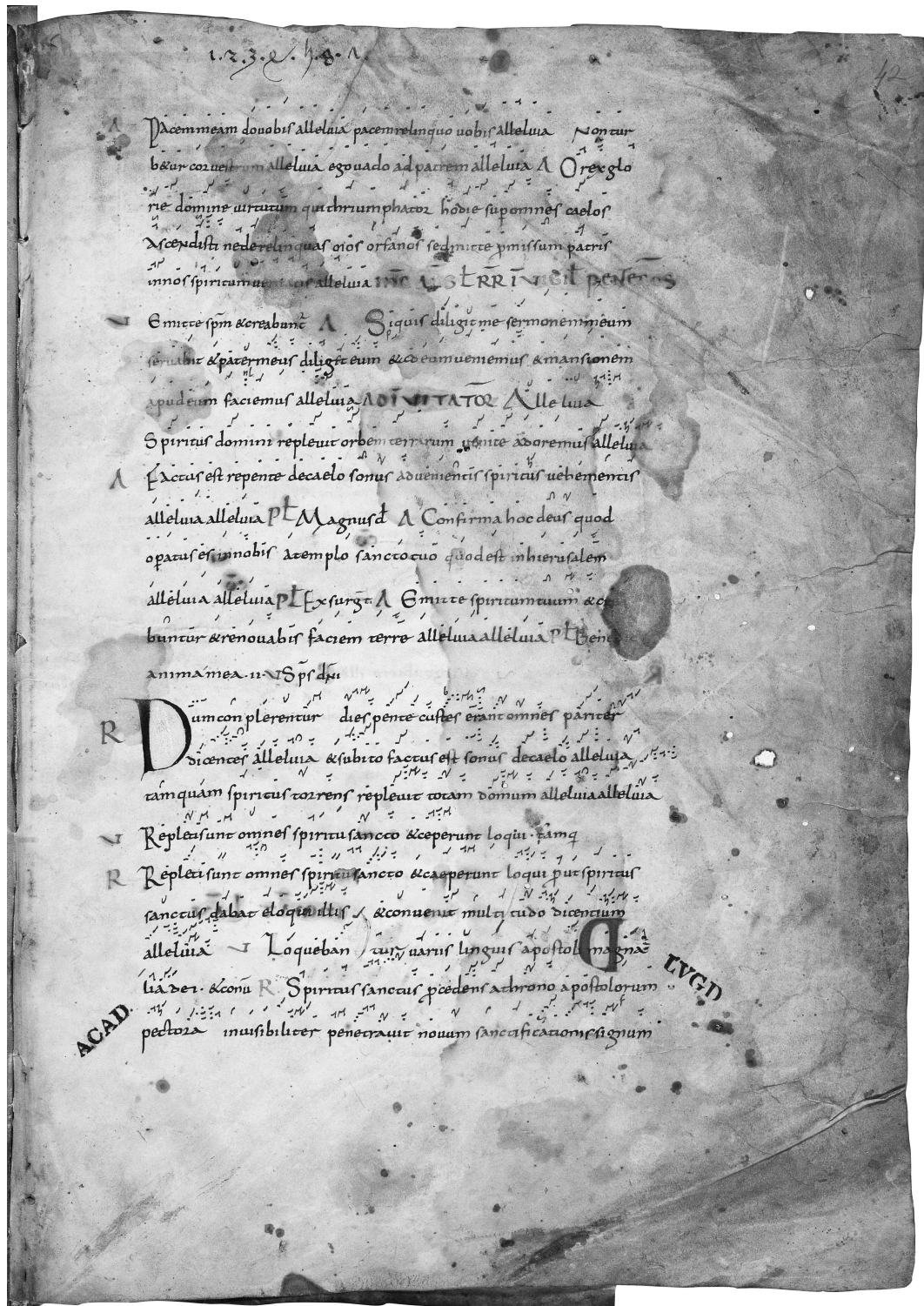
Figure 27 Leiden, Bibliotheek der Rijksuniversiteit ms BPL 25, fol. 42r.

Example 45 The opening of the Offertory *Sperent in te omnes* (Valenciennes 407
fol. 479r, recto side of folded out sheet, GT 286).

Spe- rent in te om-nes qui no- ue- runt no- men tu- um do-mi- ne
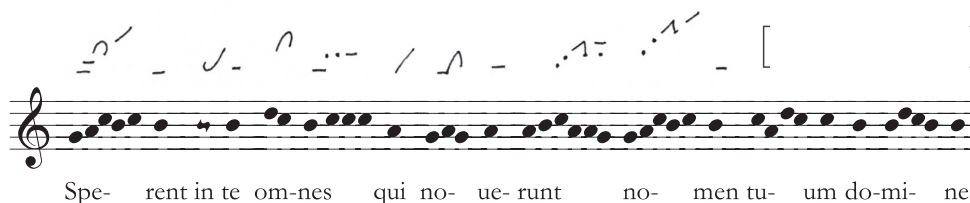
Example 46 Passage from the Communion *Redime me* (Valenciennes 407 fol.
479, recto side of folded out sheet, GT 128).

an-gu- sti- is me- is
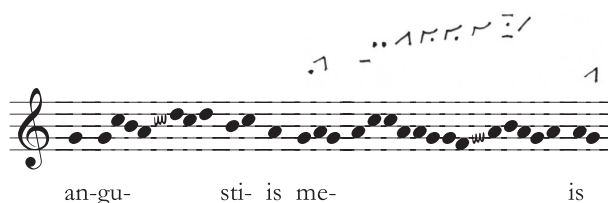
situations in C where the scribe aimed at even more precision than the scribe of La. As the
possibility of following more pitch-precise patterns for series of single neumes was noticed in
the examination of Frankish scripts, so too in the examination of Breton and Lotharigian
notations we find clear awareness of the relation between placement of neumes in the
interlinear space and intervallic structure. That the two procedures existed alongside each
other and that they could be mixed – the work of one scribe straying towards a pitch-specific
placement when the melody to be notated was relatively simple and towards continuous
diagonals when the melody was more elaborate – is in itself indicative of choices being made
on the basis of knowledge rather than some sort of blind shuffle towards precise intervallic
notation. There is no way of arguing, on the basis of the information currently before us, that
one or other of these procedures is older than the other.

Whether or not this mixing of the two layout procedures was more widely typical of
Breton script can be considered through examination of other ninth-century examples,
including scraps of two folios from a gradual (Valenciennes BM 407, endleaf and offset on
the binding of the main manuscript), and three folios from an antiphoner (Leiden BPL 25,
fols. 1, 42–3; Figure 27). The work of the Leiden notator is very careful. Although there are
occasional moments when, as in the notation of a melismatic passage in a responsory, he had
to move the neumes up so that others could be added for syllables immediately below, in
general his work follows the procedure of moving up and down in relation to pitch. Much of
his notation was for antiphons, with little more than one or two notes per syllable, thus space
problems did not arise often. The work of the Valenciennes scribe is different, if anything
even more inclined to write in diagonal strings than the scribe of C. For the opening of the

Example 47 Passage from the Offertory *Domine in aux-
ilium meum* (M fol. 73v, C fol. 20v, La fol. 29v, GT 331).


qui que- runt a- ni- mam me-   am
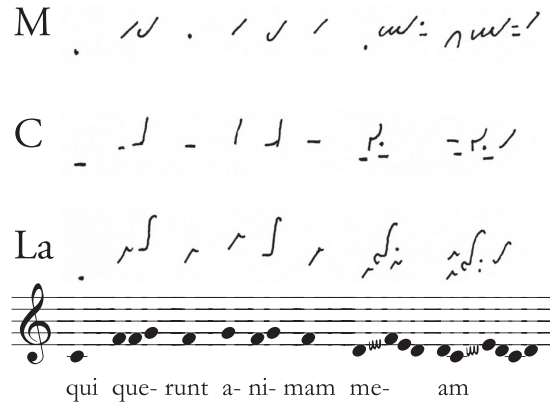
Offertory *Sperent in te*, he followed the Frankish procedure for the first two syllables, bringing the neume for *Sperent* down to a low level, despite its representing a pitch only a semitone below the end of the previous neume (Example 45); then for *nouerunt nomen* he allowed the neume series to rise gradually upwards, finally returning to the low level for *nomen* (sung at the same pitch as the preceding note). Immediately below, for the Communion *Redime me*, a long melisma over the penultimate syllable, *meis*, has a diagonally written string of neumes for a melodic passage that finishes close to where it started (Example 46).

In other words, ninth-century examples of the Breton type of music script show an awareness of both procedures for the placing of neumes in the space above the text: while setting out the neumes semi-diastematically at differing heights was the under-lying approach, a scribe could elect to use the other, 'diagonal strings', procedure, where – because of the matrix of melismatic elaboration and available space – it might be more appropriate.

6.2 WRITING SINGLE NOTES: LOTHARINGIAN SCRIPT

The use in the Breton script of two different procedures for the placing of neumes raises issues about the way in which single notes are written. In the Frankish script, the weight of signification of pitch change is taken by the relational sign pair point/*uirga*, and longer neumes are constructed on this basis. Whether this element of the Frankish script was also in some way part of the Breton script deserves investigation. In the notations written in La and C there are several neume forms used for single notes: both scribes used the long straight stroke known as a *uirga*, but there are significant differences in the way this sign is incorporated into their two scripts and in the way in which the contrast between the *uirga* and other forms for single notes was exploited.

Example 48 Passages from the Introit *Gaudeamus*, Communion *Narrabo*, Offertory *Precatus est*, Introit *Oculi mei*, Introit *Sitientes* (La fols. 14v, 28r, 29r, 30v, 38r, GT 546, 281, 318, 96, 114).
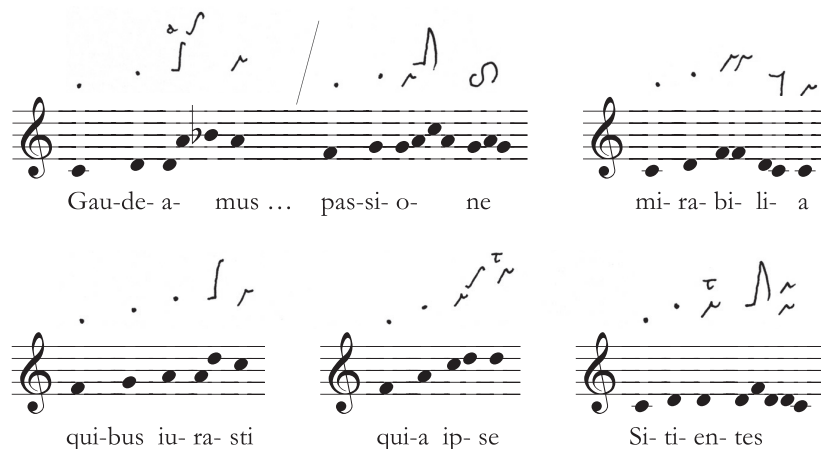
The range of forms used by the scribe of La for single notes includes the simple point and one other distinctive form, not found in any other script. To these two forms can be added all the modifications rendered possible through the use of letters – for length or emphasis *celeriter, naturaliter,*[7] *mediocriter, augete, tenere,* for melodic precision *humiliter, equaliter, mediocriter, levare, sursum.* The distinctive Laon (and indeed, Lotharingian) neume is written as a short line slightly slanted to the right with a curved tick at the upper end. Although the scribe of La occasionally writes a simple dot for a single note, above all at the beginning of chants (as for *Ad dominum*), his general practice in writing neumes for single notes is to use the so-called *uncinus,*[8] whether that sign be for a note higher or lower than the previous one. Where in some other scripts the contrast of point and *uirga* would be used to indicate intervallic relations through symbolic means, here the scribe writes the *uncinus* at different heights, as at *manifestabitur* in *Ego autem* (Example 41), *dum tribularer* in *Ad dominum* (Example 43) and *querunt animam* in *Domine in auxilium meum* (Example 47). Unless it were to be argued that the Lotharingian music script was the earliest to have been invented – which will not be the case presented below – we have to regard this '*uncinus*' graph as newly invented by the scribe(s) who fashioned Lotharingian script.

Comparison with other notations for individual chants indicates that the *uncinus* should not be considered as a straightforward equivalent to the Frankish point or *uirga*: in fact, it represents an entirely different kind of approach to writing musical sound. For this new form is the basic unit of representation in a script in which neumes are moved up

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[7] Treated as *non [tenere]* in Agustoni and Göschl, *Einführung* I, 156.

[8] Fischer, 'Laon, Bibl. de la ville, 239' in the series 'Einführung in Handschriften des Gregorianischen Chorals'. I have not been able to trace the origin of the name '*uncinus*' (hook), but it seems to have been current in the circle of Cardine and his pupils.

Example 49 Passages from the Introits *Domine refugium* and *Verba mea* (La fols. 22v, 34r, GT 79, 83).

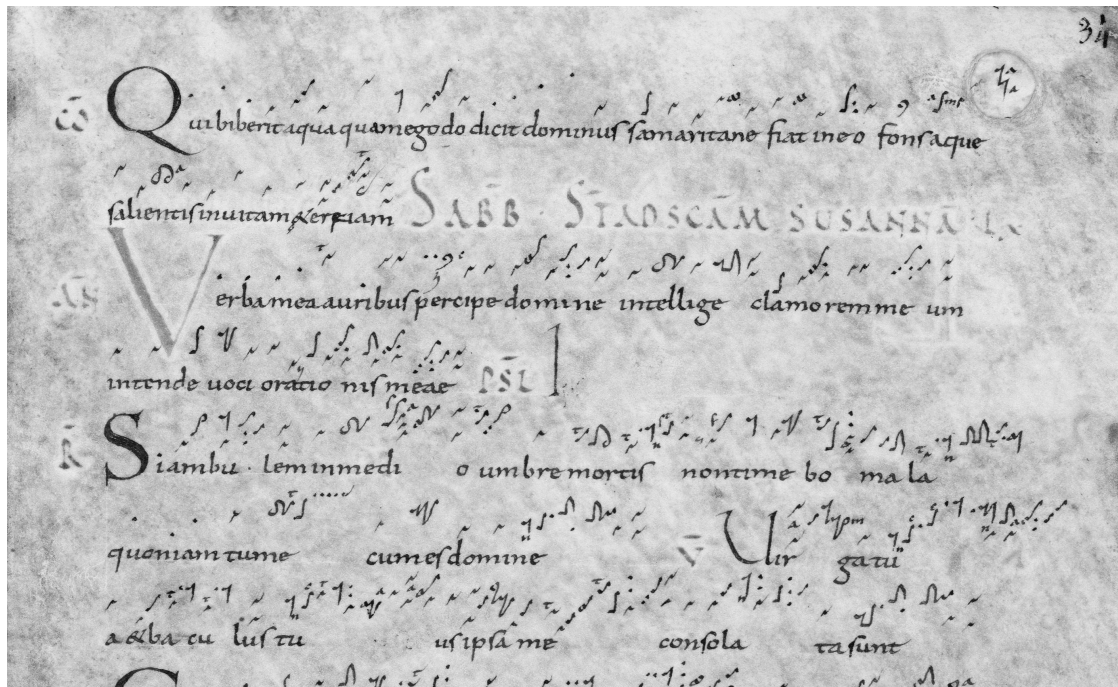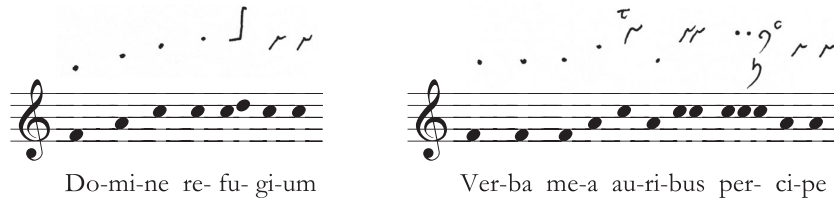Do-mi-ne re- fu- gi-um   Ver-ba me-a au-ri-bus per- ci-pe

Figure 28 Ville de Laon, Bibliothèque municipale ms 239, fol. 34r (section).

and down in the space above the words, in a semi-diastematic manner: that is why it is written where other scripts use more than one sign. Given the enormous reliance of the Lotharingian script on this sign, that it should have been made more distinctive than a simple point is easily explained: in any kind of difficult light conditions, or when dealing with a parchment covered with black hair follicles (as in M), a succession of points could easily be obscured.

An important corollary of this understanding of individual signs is that the choice between the point and the *uncinus* is not determined by changes of pitch.[9] Moreover, the

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[9] For an extended study of the use of the point rather than the *uncinus* in La, see Paul M. Arbogast, 'The Small Punctum as Isolated Note in Codex Laon 239', *EG* 3 (1959), 83–133.

Example 50 Passages from the Communion *Qui biberit* and the Gradual *Si ambulem* (La fol. 34r, GT 99, 125).

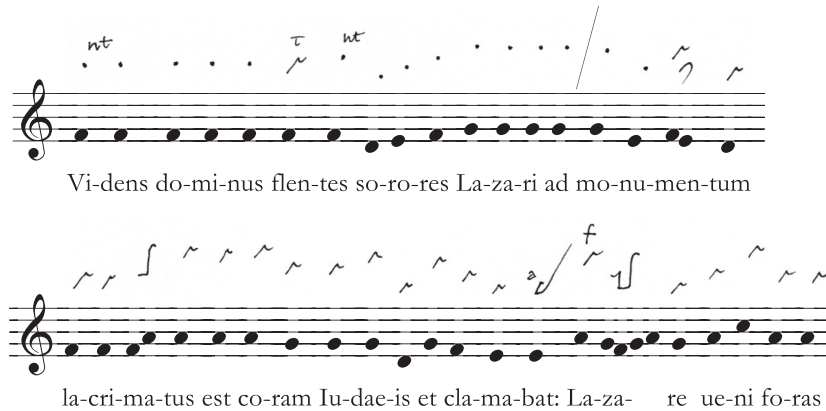Qui bi- be-rit a- quam   quo- ni-am tu me-   cum es

extent to which the scribe of La writes juxtaposed points and *uncinus* signs indicates an entirely deliberate and meaningful approach to the handling of forms for single notes, albeit entirely dissimilar to the approach in Frankish script. A common habit in his work is to write the first neumes for a word or group of words that opened with single notes as points, moving to an *uncinus* for the first accented syllable: a series of examples is shown in Example 48. The last of these examples, from the Introit *Sitientes*, is highly instructive. Unlike the other examples, the weight of musical elaboration occurs here on an unstressed syllable (*sitientes*). The scribe writes points over the first two syllables, then an *uncinus* over the third (sung at the same pitch as the second). Then, just to underline the position of the stressed syllable, he adds 't' above this *uncinus*. The openings of the Introits *Domine refugium* and *Verba mea* (Example 49 and Figure 28) are also informative, since both describe the same melodic shape, rising through two thirds (**F a c**). In *Domine refugium* the first four syllables were notated with points, followed by a two-note neume on the stressed syllable *refugium*, and then two *uncini* for the last two syllables. In *Verba mea*, the first four syllables were also notated with points, followed by an *uncinus* for the stressed syllable *auribus*: here there was no expansion of the sound of the syllable through more notes, so the scribe took care to write an *uncinus*, with an added 't'.

The two chants immediately above and below *Verba mea* on fol. 34r of La both have interesting examples of series of points (Figure 28). The Communion *Qui biberit aquam* opens with points over *Qui biberit*, followed by an *uncinus* over *biberit* (Example 50). The pitch pattern for this opening descends for the first four syllables (**d d c b**), and this is clearly mirrored in the placement of these neumes. The musical accent is tied to the textual stress on *aquam*, for here the melody rises and there are two notes for this syllable. The *uncinus* over the last syllable before the accent, *biberit*, must surely be read as some sort of preparation, a transition between the speed/emphasis of the opening notes and the text/music accent on *aquam*. In the Gradual *Si ambulem* an even more marked example of this transitional behaviour can be found at *quoniam tu mecum es* (Example 50). Here three points for *quoniam* are followed by an *uncinus* for *tu*, and then a melisma of eleven notes on the stressed syllable *mecum*.

The difference between ways of writing single notes in the scripts written at Laon and at Sankt Gallen was noticed by Dom Ménager, in a study published with the facsimile of La in

Example 51 Passage from the Communion *Videns dominus* (La fol. 38r, GN 94).

Vi-dens do-mi-nus flen-tes so-ro-res La-za-ri ad mo-nu-men-tum

la-cri-ma-tus est co-ram Iu-dae-is et cla-ma-bat: La-za-   re ue-ni fo-ras

Paléographie musicale 10.[10] Here he noted that at Sankt Gallen, the scribes 'had to use two different signs, *punctum* and *uirga*, in order to indicate – as much as possible – the melodic height of a single note over a syllable'.[11] The contrast between the two signs used for isolated single notes in La was of a different kind: it was not about melodic height, but about length, one sign (point) showing a short note, the other (*uncinus*) showing a longer note 'of normal value'.[12] Although this clarification of the difference between the point/*uirga* contrast and the signs in La was much contested in the period immediately following the publication of Ménager's study,[13] his simple analysis is easily demonstrable for S and La – this is also the way in which more recent semiological work has understood and presented these notations.[14]

Although its addition to neumes for single notes is more unusual than for longer neumes, the sign 't' (*tenere*) could be added beside an *uncinus* to indicate a long single note – creating a spectrum of three different single note lengths: point, *uncinus, uncinus* + t (short, normal, long). A striking example of the distinction of single note lengths in a notation in La is in the Communion *Videns dominus* (Example 51).[15] Here all but one of the syllables in the first phrase,

[10] 'Aperçu sur la notation du manuscrit 239 de Laon'.

[11] *PM* 10, 183: 'Les manuscrits sangalliens étaient obligés d'avoir recours à *deux signes* différents, le *punctum* et la *virga*, pour indiquer, autant que possible, le hauteur mélodique d'une note isolée sur une syllabe.'

[12] *Ibid.*, where the two signs are referred to as a short and a long *punctum*; Ménager also quotes Mocquereau's remarks, on which his own work was based.

[13] See Arbogast, 'The Small Punctum', with further bibliography.

[14] Fischer, 'Laon, Bibl. de la ville, 239' in 'Einführung'; and Agustoni and Göschl, *Einführung*, I, 3.2.1: 'Einzeltonneumen in SG', and 3.2.2: 'Einzeltonneumen in der Notation von L'.

[15] On this occasion the melody offered in the GN is self-evidently closer to the notation of La: for the basis of the restitution see Kees Pouderoijen, 'Die melodische Gestalt der Communio "Videns Dominus"', in *Cantando praedicare. Festschrift Godehard Joppich zum 60. Geburtstag*, ed. Stefan Klöckner, *BG* 13/14 (1992), 129–55, and *BG* 26 (1998), 17–18.

'Videns dominus flentes sorores Lazari ad monumentum', are sung to single notes:[16] only *monumentum* is allowed more (two notes), and only *flentes* and *monumentum* are notated with *uncini* rather than points. Even the delivery of the notes notated as points is controlled, with 'nt' (probably 'non tenere') written at the beginning, then 't' over *flentes*, with an immediate cancellation through 'nt' over *flentes*. Whether 'non tenere' at the beginning was merely a warning, to advise that these were notes sung fast, or an indication that these points should be sung even faster than was usual, is unclear. Nevertheless, this very specific notation shapes the chant in a forceful way, insisting that the singer builds this first phrase around one word, *flentes*, and then slows down at the end of this phrase for the continuation 'lacrimatus est coram Iudaeis, et clamabat',[17] which is almost entirely notated with *uncini*. The whole of this chant was already a tiny dramatic *scena*, with the report of Christ's shout 'Lazarus, come out' sung in the highest register of the chant, followed by the emergence from his tomb of a man who had been dead for four days. In his notation the scribe of La was building on a latent quality of the chant, increasing its intensity through speed and emphasis, and found ways to do this using the Lotharingian script.

6.3 writing single notes: breton script

The scribe of C uses both the techniques present in the Lotharingian and Frankish scripts, that is, sometimes he uses the point/*uirga* contrast, sometimes he moves the neumes up and down the page and then again sometimes he uses both techniques together. The contrast between a point and a *uirga* is used to indicate the relation of single notes for single syllables, as, for example, in *Ego autem* at *manifestabitur* (Example 41) and in the Offertory *Domine in auxilium meum* at *quaerunt animam* (Example 47). There is a significant difference between the way in which the *uirga* is used in this notation and in the Frankish notation, however. In general, when moving upwards, once the melody has reached a particular level, the scribe of C will abandon the *uirga* (or any other rising sign that precedes) and start to write points or dashes. This can be seen in *Ego autem* at the beginning: the upward movement on *Ego* is followed by notes on one pitch (**a**), written out by the scribe of C as simple dashes, where the scribe of M wrote *uirgae*. In another set of circumstances, this can be observed at *dum tribularer* in *Ad dominum* (Example 43): once the neume above *dum* had been written as a *uirga* (to indicate a rise from the low note at the end of *dominum*), the next neume, for a note sung at the same pitch (**F**) was written as a point, and then the neume for *tribularer*, for a note sung a third higher, was also written as a point. The scribe of M wrote all these single notes as *uirgae*. Finally, the habit of giving up the *uirga* once a specific high pitch had been reached can be seen in *Ad dominum* at *dolosa*: again the scribe of M wrote *uirgae*. Further study of C underlines the extent to which these scribal habits are consistent. This

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[16] 'The Lord, seeing the sisters of Lazarus weeping at the tomb'.
[17] '[the Lord] wept in the presence of the Jews, and cried out'.

Example 52 Passages from the antiphons *Auditum tuum* (Oxford Auct F.4.26, Vat SP B.79 fol. 53v) and *Domine clamaui* (Oxford Auct F.4.26, BNF lat. 12044 fol. 36r).

from Vat. B.79

reconstruction of melody in F.4.26

Au- di-tum tu-um do-mi-ne au-di- ui

Au- di-tum tu-um do-mi-ne au-di- ui

Do- mi- ne cla- ma- ui ad te ex- au- di me
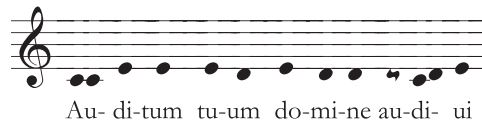
way of using the *uirga* associates the sign with moments of movement to higher pitches, but not with stasis at a higher pitch.

Examination of other examples of Breton script written in the ninth century shows the practices of the scribe of C to be quite widespread. In the Proper chants of the mass notated on two folios used as an endleaf in Valenciennes 407, dual procedures for placing neumes have already been remarked. The horizontal space available to this scribe was more limited than in C, and his neumes frequently formed an almost illegible mass of dots and dashes. Going further back, to the early fragment now in Oxford (Bodleian Library Auct. F.4.26), the mixing of points set at different heights and *uirgae* follows a clear system: the point/dash is the main form for a single note over a syllable, but a *uirga* can be introduced to clarify or insist on a rise. In *Auditum tuum* the scribe began by writing points for a repeated pitch and then continued with a point, set at a lower level, for *tuum* (Example 52); only at this stage did he take advantage of the *uirga* as a sign indicating a rise to write a note a tone higher for *domine*. Similarly in *Domine clamaui*, he began with points, writing that for *Domine* at a lower level than the two preceding, and then a *uirga* for *clamaui*, effectively taking the pitch level back up to where it had started (Example 52). There is no sign anywhere on this Oxford folio of the type of layout characterized by diagonal strings. In three folios from an office antiphoner now in Leiden, use of the *uirga* is exactly similar to what has just been said of the Oxford fragment; and then, since office responsories with melismatic elaboration are notated here, there are occasional flashes of a diagonal layout, but these are limited to specific moments in individual chants. In contrast, the space above the text is extensively exploited to indicate different heights for successive neumes. Finally, in the notation for a drinking song, *Bachifer eia*, in Paris BNF lat. 7680 (fol. 39r), the main neume (by a long distance) is a dash, usually slanted

upwards; these are moved up and down with much distinction of height, while there are no *uirgae* at all.

6.4 INCORPORATION OF THE *VIRGA* INTO LONGER NEUMES IN CHARTRES 47 AND LAON 239

With rare exceptions, the scribe of La did not use the *uirga* as a single form over a syllable,[18] but this does not mean that he did not know the sign. Indeed, to say that the *uirga* is not present in the notation of La would be a serious error, for it is omnipresent in neumes for longer note groups, including the way of writing two rising notes in two separate strokes, the main sign for three rising notes (as for *apparebo* in *Ego autem*, Example 41), and in compound neumes (as for *satiabor* in *Ego autem* and for *dominum* and *Domine* in *Ad dominum*, Example 43). In all these cases the form is rendered distinct from the more common shape of a *uirga* by being written with turned ends. This special Lotharingian form precedes or follows a neume representing a lower note, and in this restricted sense the La scribe's use of the form is similar to its use in Frankish script. But it is not always used to represent the highest note in a group, as can be seen at *satiabor* (Example 41), where the *uirga* element in the notations of M and C is the third stroke in a compound neume (written for the highest note in the group), whereas the *uirga* element in the La neume is the second stroke, before an *uncinus* representing the highest note in the group.

Thus, in the work of the scribe of La the primary means of indicating movement up or down in pitch was not dependent on a contrast created through the symbolic meaning of different signs, but on the physical placing of a sign higher or lower above the text syllable. While there is clear evidence in La of awareness of the *uirga* as a sign, it was not used with the full force of its meaning elsewhere; the way in which the La scribe incorporated the *uirga* into longer neumes links it more closely to the 'movement upwards' behaviour characteristic of its use in C than to the static 'this is a high (or higher) note' use typical of Frankish notations. That it does not appear as an isolated sign for a single note is telling: given the presence of the *uirga* – in a modified shape with turned ends – in longer neumes, and its rare use for single notes, it is obvious that the designer(s) of the Lotharingian script knew the Frankish *uirga*. The absence of the *uirga* as one of two main signs for single notes in this script must therefore be understood as a rejection.

As in La, notations in C show the *uirga* incorporated into forms for two rising notes, three rising notes and compound neumes: since the basic procedure of this scribe is to indicate a note as a point, relativizing it in pitch terms by control of height, the *uirga* is simply incorporated into this procedure where it can be made useful, as in *Ad dominum* at *exaudiuit me* (Example 43): having written out four notes as dashes and points, he wrote the fifth and

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[18] There are occasional exceptions, as on fol. 34v (*Qui confidunt*, at *Sion*); see Fischer, 'Laon, Bibl. de la ville, 239' in 'Einführung', 78.

last note of the group with a *uirga* stroke. The comparison of these two notators' incorporation of the *uirga* into specific compound neumes is revealing, however: very commonly, it is not placed in the same situation, or used in one notation and not in the other. Several examples of the latter case are found in the Gradual *In deo sperauit* (Example 11, p. 169); for example, at the cadential formula written out for <u>sum</u>, the scribe of La uses a *uirga* graph twice, each time for the high note in the group. On the first occasion the scribe of C joined two notes, rather than writing them separately, and on the second wrote a dash. Other situations where the *uirga* is used in a different place within a compound neume are telling about the scribe of La's concern with minute detail. In *Ad dominum* in the middle of the long melisma on *me* (Example 43), a group of eight notes is written out by the scribe of C with a combination of points, dashes and one *uirga*: each single note is represented by one stroke. In the same context, the scribe of La wrote points, *uncini*, a joined sign for two descending notes, one *uirga* and two 't's. With the placement of the *uirga* on the fifth note of the group, (**a**), he could show emphasis of that note, whereas – even if the scribe of C heard the melody that way – he certainly did not notate it. Writing a *uirga* with a 't' within a longer neume was habitual on the part of the scribe of La.

6.5 JOINING AND SEPARATING

The presence in the notations of C and La of a form indicating a way of singing two rising notes that was different from the normal form written in one stroke has already been discussed. In writing the neume for this different form of delivery as two separated strokes, the inventors of the scripts used by the scribes of C and La conveyed meaning in a manner quite distinct from Frankish techniques: in this latter script the repertory of simple signs was simply increased through the invention of a new curved form, so that for two rising notes a scribe could choose to write an angled or a curved form. In the scripts written in C and La, no new form was invented; rather, two signs for single notes, the point or *uncinus* and the *uirga*, were set together. This encouraged a reader to understand that a neume written in a single stroke ('joined') represented a normal (or faster) delivery, whereas a neume written in two strokes ('separated') represented a slower delivery.[19] The two scripts also have an equivalent procedure for two falling notes: the normal form is written as a stroke pulled towards the right and turned downwards, always with a sharp angle. The scribe of La usually wrote this with a curving first element and a long downwards stroke, as in *In deo sperauit* at the first *et* (Example 11). At the same point the scribe of C wrote a shape very like this; more commonly, and without any perceptible difference of meaning, he wrote a more angled sign, beginning with a stroke inclined upwards and then turned down (but not perpendicular to the writing line) – as in the

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[19] This procedure, named 'désaggrégation' by Ménager, was described in 'Aperçu sur la notation du manuscrit 239 de Laon', 181.

Example 53 The first verse of the Tract *Qui confidunt* (C fol. 23v, La fol. 34v, Laon 266 fol. Av, GT 109).

Qui con-fi- dunt in do- mi-no si- cut mons Si- on

non com-mo- ue- bi- tur in ae-ter- num

qui ha- bi- tat in Ie-ru- sa- lem.

Example 54 Joined forms in the Tract *Qui confidunt* (Laon 266 fol. Av, La fol. 34v, GT 109).

neume immediately before *et* for *meum*, and in *Ego autem* at *gloria* (Example 41). Besides this form written in a single stroke, two falling notes may also be written in two separate strokes, either as two *uncini* by the scribe of La (as in *Qui confidunt* at the ends of melismas on *Sion, aeternum, Ierusalem*, Example 53), or with two dashes or combinations of points and dashes, by the scribe of C (as in *Qui confidunt* at the end of the melisma on *Sion*, Example 53). When compared with notations in S for the same passages, the separated form in La often corresponds to a neume written with an *episema* (as in *In deo sperauit* at *meum* and *sum*, Example 11): the absence of corresponding signs in the notations of M and C at these points does not reflect on the availability of these differentiated ways of writing but merely on the fact that the scribes of M and C did not notate as much detail about this element of delivery as those of S and La.

That this technique of joining and separating became more than a way of creating graphic forms for basic signs but a general procedure, at least in the Lotharingian script, is implied by extensive evidence of long continuous forms – more in La than in any other manuscript. Such neumes can be seen in *Qui confidunt*, at *Sion*, where one continuous form represents nine notes, at *aeternum* and at *eius* each for six notes and at *sui* for seven notes (Example 54).

These neumes constituted from continuous strokes do not represent series of lines joining points on the page: to follow their meaning the reader must dissect the long form into shorter elements. Thus the neume in La over *Sion* can be divided into a first element for two falling notes, a second for three notes low–high–low, a third for two falling notes (the first of which is sung at the same pitch as the preceding note, with a wiggly line as the first element of this graph) and finally another two-note falling group: these divisions are shown in Example 54. The simplest demonstration of the fact that such forms were created by joining together shorter basic signs, rather than conceived as a series of lines joining positions on the page, is the neume often written in La that links two falling notes to three notes low–high–low: written with the end of the falling element of the first part joined to the first (horizontal) element of the second part, the note represented by the central horizontal element may be at the same pitch as, or higher than, the first note of the neume (as in *Ego autem*, at *conspectu*, Example 41).[20]

The result of this technique of joining shorter neumes was a high degree of differentiation, since the corollary of extensive continuous neume forms was that procedures of joining and separating held meaning. The presence in Laon 266 of long continuous signs, many in the same places as those in La, underlines the fundamental nature of this procedure in the Lotharingian script, or at least the version of that script written at Laon. In *Qui confidunt* in the melisma for *Sion*, a sign for nine notes written as one neume in La is matched in Laon 266 by two neumes, for two notes and then seven notes (Example 54). For *aeternum* and *eius* both scribes wrote continuous strokes for six notes; and over *sui* it was the scribe of Laon 266 who wrote the longer neume, for nine notes, matching neumes for two and seven notes in La.

This joining and separating procedure is much less evident in Breton scripts, except in the basic forms of neume for two notes rising and two notes falling. Even at the next level up, for three or four notes, the scribe of C will tend to show their relation by grouping, rather than by joining. Longer continuous forms do not appear in this script.

6.6 other signs and procedures in chartres 47 and laon 239

Besides the set of four neume forms for two rising and two falling notes, the scribes of La and C shared many other forms. These include two three-note forms, for high–low–high and low–high–low. In common with the joined two-note descending form, the scribe of La writes the high–low–high neume with a long fall and rise, while the scribe of C never pulls the descending stroke so low. These shapes can be seen in *Qui confidunt* at *mons, commoue-bitur*, and *habitat* (Example 53). For the opposite movement, low–high–low, the scribe of C writes two different forms in continuous strokes (as well as separated forms): one of these begins with a horizontal line, followed by an arch (in *Qui confidunt* at *confidunt*, in *Ad*

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[20] See also Fischer, 'Laon, Bibl. de la ville, 239' in 'Einführung', 78.

dominum at *do<u>mi</u>num* and *Domine*, Example 43, p. 233), while the other is written as a kind of zigzag (as in *In deo sperauit* at *uoluntate me<u>a</u>*, Example 11, p. 169, and in *Ego autem* on *tua*, Example 41, p. 231). Since in some cases, including these latter two, this zigzag shape corresponds to a form of the low–high–low sign in the notation of S that indicates length/emphasis, it is possible that the scribe of C chose which sign to write with care, but without more detailed study of a large number of cases, this question cannot be resolved. The form written in La in these same situations has a longer upward stroke that turns downwards at a sharp angle, this last element not straight but curved. These Lotharingian and Breton neumes clearly represent related forms that have been handled in different ways graphically. The other neume form shared between the two script types is that for short repeated notes, written in both notations as dots, the series often finished with a dash (as in *In deo sperauit* at *me<u>a</u>* and *Ad dominum* at *tribu<u>la</u>rer*, Examples 11 and 43); this form is clearly distinct from the short vertical lines used in West Frankish notations, and the commas characteristic of East Frankish notations.

One of the most interesting relationships between the notations of La and C concerns forms for the *quilisma* and for the *oriscus*. Since none of the forms for these signs is precisely similar from one script to the other, their forms in the two scripts will be considered separately here, before advancing to their relation. The *quilisma* in La is an important example of a unique design, written in a distinct form that is not shared with any other script (as in *Qui confidunt* at *commo<u>ue</u>bitur* and *Ieru<u>sa</u>lem*, Example 53). The sign is written with a little curve at the beginning, followed by an upward continuation of the stroke. Fischer describes the sign as composed of a round *oriscus* joined to a *uirga*,[21] but it is just as likely that the graph was not assembled from other neumes, but represents a unique and distinct form, borrowed from the new graphs used for punctuation. For this Lotharingian neume is directly comparable to one of the two forms for a question mark, while the *quilisma* form in Frankish script is directly comparable to another form for a question mark in use in the late eighth and ninth centuries.[22]

The practice of indicating with a special sign that a note should be sung as the same pitch as that which precedes or follows is regularly adopted by the scribe of La. For a note sung on its own for one syllable, the neume was written like a sideways and back-to-front 's' – the advantage of using this reversed form was that it could be distinguished from an 's' written as an added letter to indicate movement upwards, or that the melody should remain high. Both the reversed graph and the letter 's' are written close to the beginning of *Qui confidunt*, at *<u>do</u>mino* and *<u>si</u>cut* (back to front s), and *<u>mon</u>s* (letter 's'). Where the beginning or end of a longer neume was at an equivalent pitch to what preceded or followed, this script also offered the possibility of writing the relevant element of the

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[21] Fischer, 'Laon, Bibl. de la ville, 239' in 'Einführung', 83.

[22] On the relation of *quilisma* neumes to forms of question-mark, see Bischoff, *Latin Palaeography*, trans. Ó Cróinín and Ganz, 169ff. There are two main forms of question mark in use in the ninth century, and the Lotharingian and Frankish ways of writing the *quilisma* can be directly associated with these two forms.

neume in a tiny coiled shape. A form for two falling notes, beginning with this coiled element (which is self-evidently the first part of the reversed s) can be seen at *Qui confidunt* and *domino*; a way of writing the last part of a graph in this way, also relating this to the preceding note, can be seen for the fourth note from the end of the long melisma on *me* in *Ad dominum dum tribularer* (Example 43). Then ways of including this shape within a long continuous form can be seen in *Qui confidunt* at *Sion* and *aeternum*. When written in the middle of such long neumes, the originally curved shape is transformed into a more angular zigzag.

The form that can be seen in the notation for *Qui confidunt* in C at those points when La has a *quilisma* (*commouebitur, Ierusalem* and so on) consists of a short straight upward line continuing into a curve upwards to the right (sometimes pulled a long way up). Just as in the Lotharingian script the *quilisma* form can be incorporated into longer neumes, so also in C (as in *Ego autem* at *satiabor*, Example 41). It is well known that this is exactly the same shape as was written in the Breton script for a repeated note (indicated in other scripts by a different form, usually named *oriscus*): in *Qui confidunt* this neume can be seen at *confidunt, domino* and *Sion* (Example 53). In *Ad dominum*, it can be found at *dominum*, and within the long melisma on *me* (Example 43). In other words, the Breton script as written by C did not distinguish between forms written for the sound denoted by the *quilisma* and forms written to indicate a repeated pitch. Odd as that practice may seem, the fact that these two different situations should share one sign need not have been as much of a problem for an early medieval reader of these notations as it might seem. The situations in which this form appears are quite distinct, and the meanings intended in those situations are also quite distinct.[23] When written within an ascending melodic pattern, it is always the *quilisma* behaviour that is intended: this is easily verifiable through comparison with other notations. When written in a melodic pattern that does not ascend, the sign itself means nothing more than that the note it represents is at the same pitch as the preceding note, followed by a fall.

This combination of two distinct meanings in one neume form is a supreme example of how writing might function in relation to a primarily oral transmission: as long as recall of the melody was primary, the writing supporting that recall to a greater extent than replacing it, there would have been no chance of confusion on the part of a reader. For this reason, while I agree with Huglo that 'the Breton notation shows a certain archaism because it has only one sign for rendering three different neumes', I do not believe that this indicates that the whole script 'is older than more perfected notations which created for

[23] In his 1911 study, Dom Beyssac claimed that this sign corresponded not only to the *quilisma* and *oriscus* signs in other notations, but also to the Sankt Gallen *uirga strata*, and wrote: 'il est facile avec un peu d'attention de distinguer les diverses acceptions d'un même graphique: c'est le contexte qui l'indique' ('Une troisième notation rythmique', 17). Later, in his introduction to *PM* 11 (108–16), he made an extended study of uses of the sign in C: unfortunately much of his argument derives from the understanding that the Sankt Gallen notation represented an earlier layer of notational invention than that in C.

each of these neumes a distinct graphic sign'.[24] This is merely an old-fashioned aspect of the Breton script.

6.7 summary

All these shared neume forms – distinct from those of the Frankish script – as well as the way of positioning neumes above the text, and then the procedure for joining and separating neume forms (present in the notation in C, but exploited much more extensively in the notation in La) indicate some close relation between the Lotharingian and Breton scripts. Without attempting at this stage to crystallize a sense of chronology or relation to Frankish scripts, we can point to enough distinct characteristics to set these two scripts apart from the Frankish. At the stage at which we see the Lotharingian and Breton scripts, however, they both sit some distance from the point at which their shared characteristics and procedures were first in place in some earlier script system; in addition, it is now very clear that both Lotharingian and Breton scripts adopted certain signs and techniques from the Frankish script. Foremost among these is the upward stroke indicating a higher note, the *uirga*. That this was integrated into the two scripts in quite different ways is a strong indication that it was not a foundational characteristic of either. Used in a limited way and written with a significant graphic difference (turned ends) in the Lotharingian script, the Frankish *uirga* became a useful sign for the notation of detail, over and above melodic direction. In the Breton script the Frankish *uirga* achieved a more consequential place, including its status in relation to the point/dash, a quality of the script that is consistent with the occasional use of the Frankish diagonal-strings layout of neumes. That way of positioning neumes was certainly not the principal way in which those writing Breton script worked, but it was familiar to those scribes and used when necessary on grounds of space limitation.

The invention of the *uncinus* sign for the Lotharingian script and its use in a manner that has no direct corollary in either the Breton or the Frankish scripts points to a wish on the part of those who designed it to achieve something beyond the capacity of other scripts.

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[24] Michel Huglo, 'Le domaine de la notation bretonne', 83: 'la notation bretonne témoigne d'un certain archaïsme puisqu'elle ne connaît qu'un seul signe pour traduire trois neumes différents . . . Elle est donc antérieure aux notations plus perfectionnées qui ont créé pour chacun de ces neumes un signe graphique distinct'; see also Stäblein, *Schriftbild*, 30.

7

Palaeofrankish Script

That the Palaeofrankish script was invented before the other scripts already considered was clearly the view of those who named it (Handschin and Jammers in 1953).[1] In the diagram of relations between scripts produced by Hourlier and Huglo it is placed above the Breton script;[2] it also sits chronologically before all others in Stäblein's diagram, and is given a place in the graphic bases of others (shown through connecting lines in his diagram).[3] Finally, this was the script Levy saw as preceding others, whether or not it constituted a graphic basis for other scripts.[4]

Consideration of the relation of the Palaeofrankish script to other scripts must necessarily be set apart from the consideration of the relationship of the other scripts to each other, not because of the historical claims made for Palaeofrankish script, but because of a different conceptualization of the way in which graphic marks can represent sounds. The difference is simple, but profound: where in the Frankish script a short perpendicular or slightly inclined stroke represents one note, in the Palaeofrankish script it represents two notes.[5] The Palaeofrankish script also has a sign which is the mirror image (along a vertical axis) of this first, a line moving from top left to bottom right, indicating two falling notes. The presence of such signs was the reason for Handschin's description of Palaeofrankish script as a 'Tonortschrift', a script that indicated visually the pitch positions of the notes in relation to each other: reasons for rejecting this hypothesis will be presented below.[6] For now, with the relation of Palaeofrankish script to other script systems under review, the most significant characteristic is the fact that it does not have a *uirga* sign, and thus makes no use of the Frankish point/upward stroke contrast to indicate lower and higher pitches.

For the purposes of comparison using chant melodies, there is only one available manuscript source: the endleaves of Wolfenbüttel Guelf. 476 Helmst. (*olim* 510) (W) consist of fragments of two folios notated in Palaeofrankish neumes and copied at some time between

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[1] See above, p. 41.
[2] See above, p. 180.
[3] See above, p. 181.
[4] See above, p. 182.
[5] On the background to and explanation of this difference, see further below, pp. 275, and 303ff.
[6] See below, pp. 265–8, and 307–8.

900 and 950 (possibly closer to 900). Where these folios were copied is unknown.[7] As in the case of every other manuscript used in this series of comparisons, it is important to remember that these fragments may show a notational system already much changed from an early script, and possibly with elements from other notations already integrated, as in the Lotharingian and Breton.

7.1 PLACEMENT OF NEUMES IN THE INTERLINEAR SPACE

In the notations of W, the neumes are written out in the same fashion as in La, in a zigzag manner, generally showing a rise, a fall, or equality of pitch between one note and the next: sometimes limitations of space rendered this difficult to achieve. Those limitations are perhaps more noticeable in this case than in La, since the size of the neumes in relation to the space available is in a different ratio (a larger proportion for the neumes in W, a smaller one in La).

The opening phrase of the Introit *Gaudeamus omnes* shows the scribes of C, La and W all using the interlinear space in a zigzag manner (Example 55 and Figure 29). In La and W there is a noticeable movement upward from the first note to the second (**C, D**), although not in C. The three-note gesture on *Gaudeamus* (**Dab**) is shown in W by an upward stroke followed by a short dash; in both La and C the graph that corresponds to this upward stroke is the angled form for two rising notes. In both of these the third note, higher again, is written as a *uirga*. For the last syllable of the word the melody falls (to **a**), and that fall is seen in the placing of the neume (a point in W, an *uncinus* in La, a dash in C) in all three notations. But where the scribe of W moves down just a little and not as far down as the level of the point on *Gaudeamus*, the scribe of La moves further down, thereby allowing vertical space for the coming phrase that is in a higher tessitura. In other words, the W scribe's treatment of this point represented its pitch relation to what came before more accurately than the placement by the scribe of La; but this latter scribe's placement can be seen as not so much bad judgement as a knowing corrective, to allow a clearer continuation. Likewise the movement upwards through a fifth (**F** to **c**) over *in domino* is extremely visible in La. In W whatever was written over *in* is no longer visible; over *domino* there is a point and then a curved falling line (which starts well above the point, with the letter 's' (*sursum*). With this letter the scribe reminded the reader to render the top of the gesture (represented by the beginning of the falling curved line) high. On the next written line, for the passage *sub honore Agathae*, the relation between pitches and written signs is more precise in W, with a rise from the point over *sub* to that over *honore*, a fall between the graph for three notes (written as an arch) over *honore* and the same graph over *honore*, and a fall to the point over *Agathae*. Both La and C achieve much of the same. That is, there are certainly passages in the Palaeofrankish notation of W that to all appearances have a closely diastematic character (and many more could be cited), but this scribe was no more or less successful in achieving precision than the scribes of La and C.

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[7] See p. 170 n.5.

Example 55 The opening of the Introit *Gaudeamus omnes* (C fol. 11v, La fol. 14v, W fol. 1r, GT 545).

Gau-de- a-   mus om-nes in do- mi-   no di-em fes-tum ce- le- bran-tes

sub ho-no-   re   A-ga- thae mar-ty- ris

7.2 NEUME FORMS FOR SINGLE NOTES

It is not only in terms of its use of the zigzag technique for placing neumes that the Palaeofrankish script in W resembles those of La and C but also in many of the individual neume forms, despite the absence of the *uirga*. Notation for the Gradual *Adiuuabit* in W can be used as a basis for examining individual Palaeofrankish neumes (Example 56).

Forms for single notes in the notation of W include a point and a dash, fairly clearly differentiated from each other. For a single note on its own, linked with an individual syllable, this scribe writes only a point, never a dash (*Adiuuabit, eam, medio, Fluminis, impetus, ciuitatem, sanctificauit, altissimus*). The only other form that might have appeared for a single note – the *oriscus* indicating a repeated pitch – is not present here at all (nor in any of the W notations). Within the Gradual *Adiuuabit* there are several occasions when the *oriscus* is written on its own in C (*eam deus, commovebitur*, three times in *altissimus*): on three
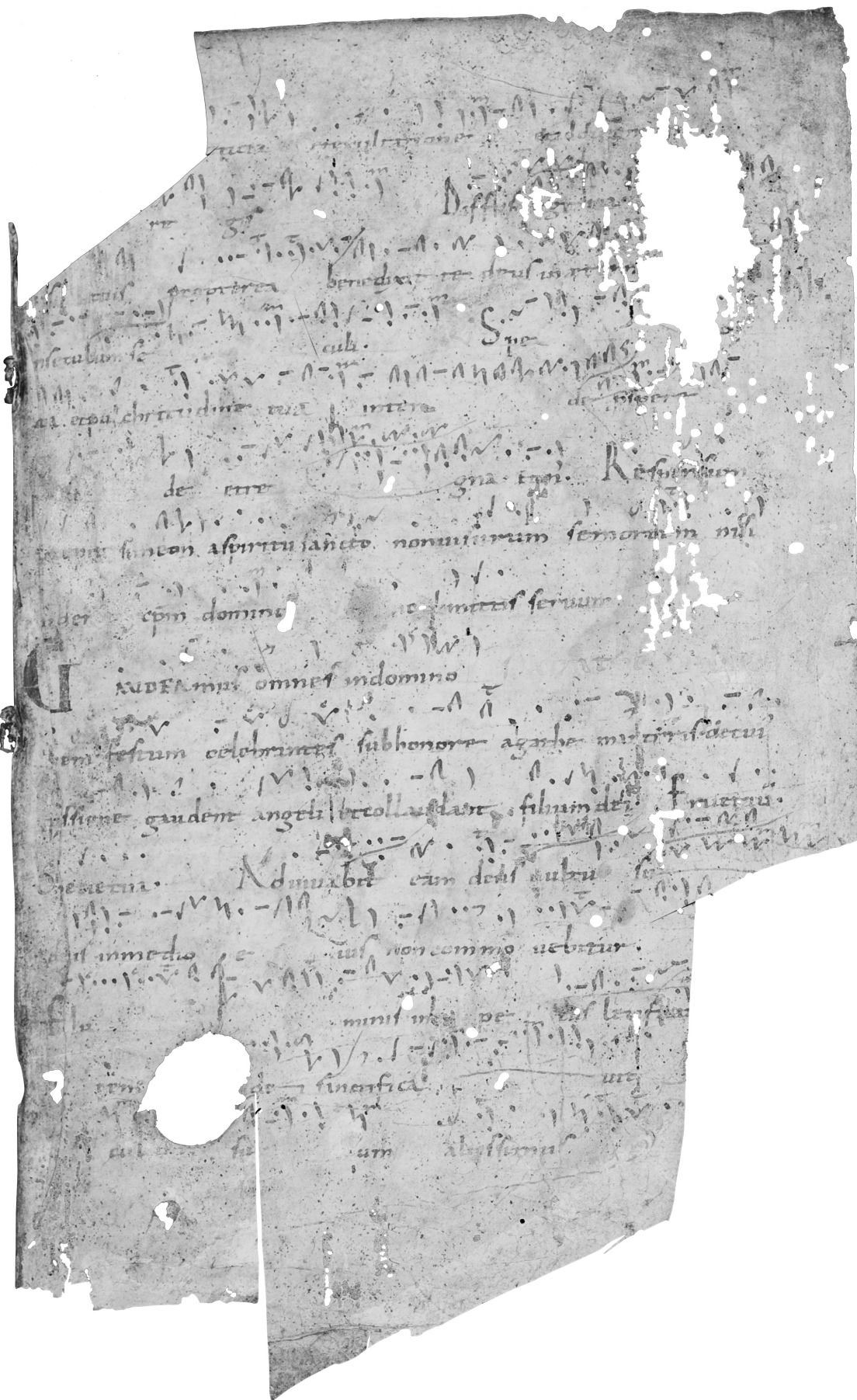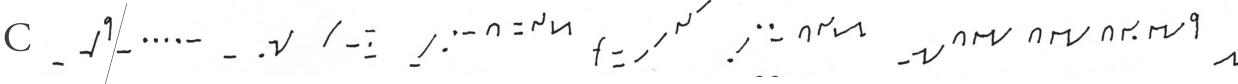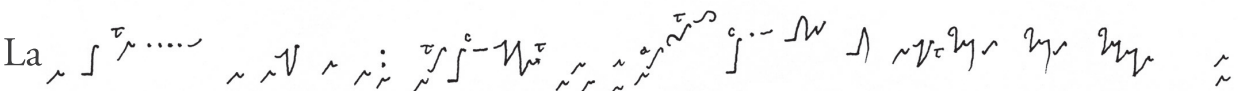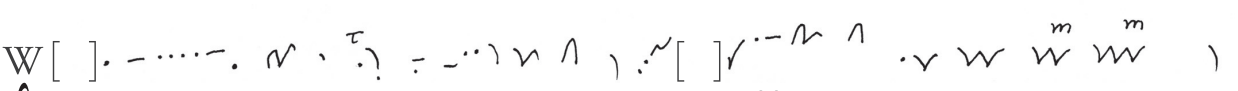
Figure 29 Wolfenbüttel, Herzog August Bibliothek Cod. Guelf. 476 Helmst. (*olim* 510), front endleaf recto.

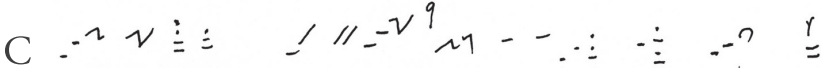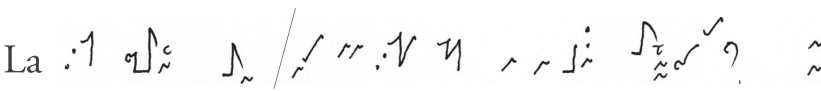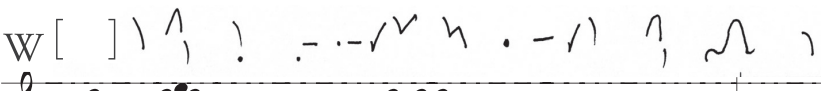**Example 56** The Gradual *Adiuuabit* (C fol. 12r, La fol. 14v, W fol. 1r, GT 526).
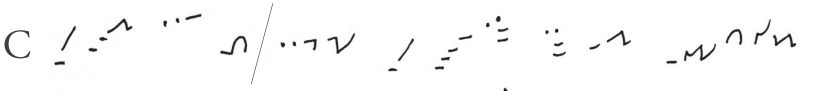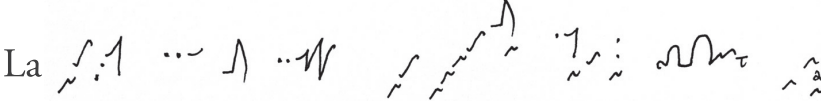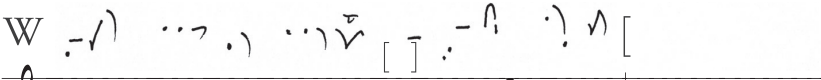
of these five occasions the notation in W is not legible, and on the other two occasions the note represented singly in C is simply incorporated into another note group in the W notation (*eam deus*, fourth note from the end, *altissimus*, second note).

Example 56 (cont.)

V. Flu- mi- nis

im- pe-tus le-ti- fi- cat ci-ui-ta- tem
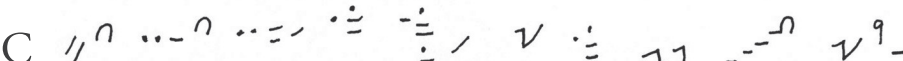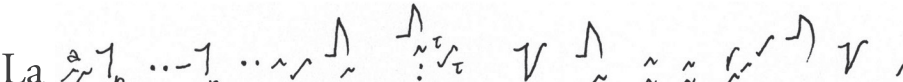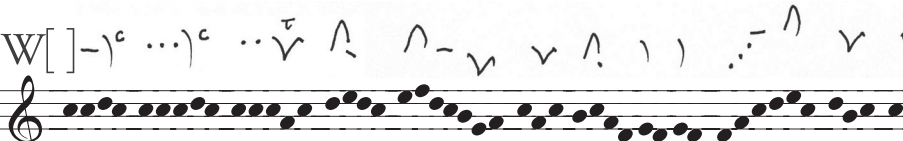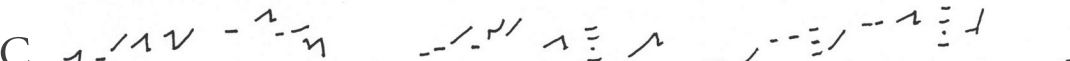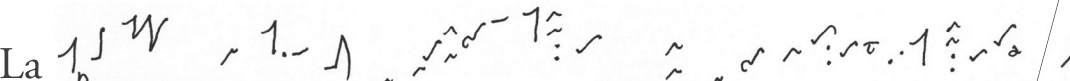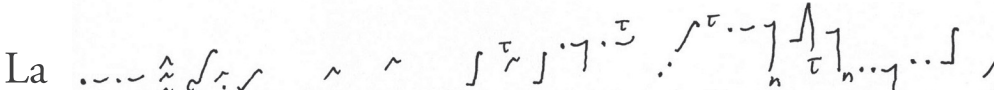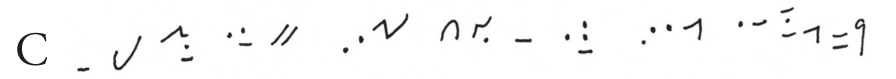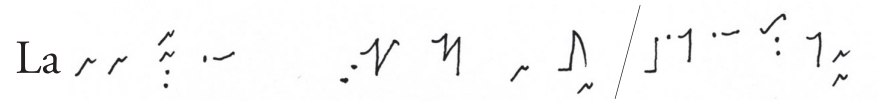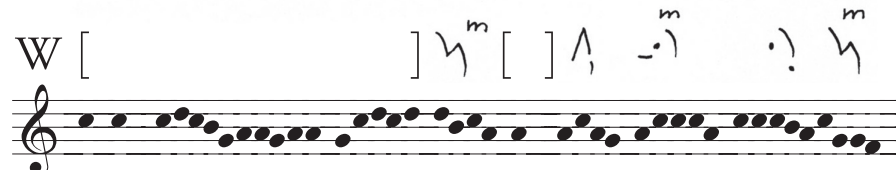

de- i san-cti-fi- ca- uit
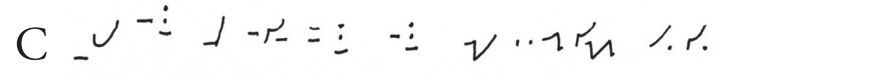
Example 56 (cont.)
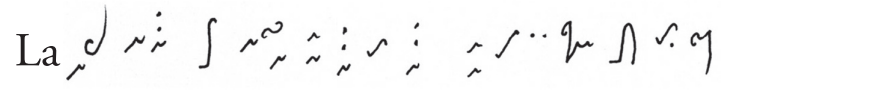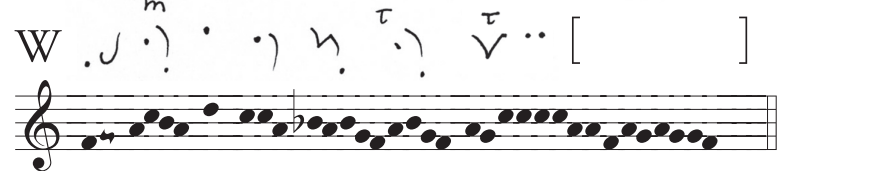
ta-ber-na- cu- lum su- um

al- tis- si- mus.

In longer note groups, the dash is used alongside the point. Above all, the combination of a point and a dash is used to shape note groups: the series of repeated notes on *Adiuuabit* is written as a dash followed by four points and then another dash; in C this passage appears written in exactly the same graphs, and in La, the first note is written as an *uncinus* (with an attached 't' in case the reader missed the point), followed by four points and a dash. Another note group of this kind, although only three notes long, appears over *commouebitur*.

The implied contrast of shorter/longer (or less/more emphasized) between the point and the dash in the notation of W is underlined by a form that corresponds to the two-stroke neume for two rising notes in C and La, as in the first note group on *deus*, then *in* and *non*. Yet, while the W notation has a dash within certain neumes where La and C use a *uirga*, it must be noted that the dash does not carry any meaning in relation to pitch. That is easily

Example 57 Graphs for two rising notes in W, C and La.

seen in the neumes over *eam deus*, where the first note group, a point with a dash above, is followed by another which begins with a dash, set at a lower height, followed by two points set higher, these last three for the same pitch. Over *impetus*, the first two notes (written in one stroke) are followed by a lower dash and a higher point (**d, f**). Not only is there no *uirga* sign – as a neume form – in this notation but also there is also no equivalent, no single-note form that has inherent pitch content. In this the Palaeofrankish script is even more starkly differentiated from the Frankish than the Lotharingian and Breton scripts.

7.3 NEUME FORMS FOR NOTE GROUPS

Besides a two-stroke form for two rising notes, written as a point followed by a dash set above and to the right, the scribe of W also writes a single stroke for two rising notes, a simple line moving upwards (*sanctificauit*); this can also appear as an element in longer note groups (*uultu*, *medio*, *eius*, *non*). Sometimes this rising element is preceded by a short approach stroke, sometimes not: equally, the stroke can be straight, or slightly curved to the right. The equivalences in the notations of C and La are instructive: for *uultu*, there is a difference of reading between these two, with the non-separated form for two rising notes in La and the separated form in C. For the beginning of *sanctificauit* both C and La have the non--separated form. These cases provide the graphic equivalents shown in Example 57. In two of the five cases where the upward stroke is written in W as part of longer groups within a compound neume, the same part of the musical gesture is recorded in the notations of C and La as two points or dashes, followed by other longer graphs (*medio, non*). In three cases

Example 58 Graphs for two falling notes in W, C and La.

the notation in La also has the one-stroke form for two rising notes (*uultu, eius, sanctificauit*), suggesting its equivalence to the simple straight stroke of the Palaeofrankish script.

The mirror image of this form for two rising notes is a downward stroke, slightly curved, signifying two falling notes (Example 58). This can be found on its own (*suo, eius, dei*), as well as in longer groups. The neumes written at those same points in La and C vary between continuous and separated forms: La almost always has the separated form – probably since all these cases sit at the ends of word groups. When the equivalences within longer note groups are included in the comparison, an even clearer picture emerges (Example 58). The curved single stroke of the Palaeofrankish notation is written where C and La have either two points (*eam deus, eius*, C *commouebitur*, etc.); or the one-stroke form for two falling notes (*non*, C *commouebitur*, La *commouebitur*, *Fluminis* × 2, then twice again in C, *impetus, impetus*, etc.), that is, when the delivery is intended to be fast; or two dashes (or, in L, *uncini*), when the delivery is intended to be slower (*uultu*, twice in *Fluminis, dei*). I have left out of these lists three-note groups, which will be discussed immediately below, and also those occasions where the way in which the note groups are articulated in W differs from C and La, rendering direct comparison of neume forms impossible. The equivalences between the three notations therefore reveal a degree of differentiation in the notations of La and C that is not

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Example 59 Graphs for three notes low–high–low in W, C and La.

	W	C	La
uul<u>tu</u>			
commo<u>ue</u>bitur			
<u>Flu</u>minis			
impe<u>tus</u>			

in compound neumes

	W	C	La
d<u>eus</u>			
<u>ei</u>us			
<u>Flu</u>minis 1			
<u>Flu</u>minis 2			
<u>su</u>um			

present in W. Where the falling movement in La and/or C has not been written in two strokes, the graphic relation between the Lotharingian and Breton forms for this musical gesture – written as a stroke moving across the page, then angled downwards – to the falling curve of the Palaeofrankish is now obvious. The only difference in the Lotharingian and Breton forms is the presence of an opening horizontal element.

As for two-note neumes, a continuous stroke for three notes low–high–low may match continuous forms in the notations of La and C (Example 59): at *uul<u>tu</u>*, the end of *<u>Flu</u>minis*, and *impe<u>tus</u>* the Palaeofrankish form written as a simple arch corresponds to continuous neumes in C and La. At other points where the arch-form is written in W, one or other of C and La may have a separated form or a series of dots and dashes, or a differently articulated series of neumes (*d<u>eus</u>, <u>ei</u>us, <u>Flu</u>minis* twice, *<u>su</u>um*). On one occasion W has

Example 60 Graphs for three notes high–low–high in W, C and La.

three notes represented as a point and a falling curve, where both C and La have a continuous form (*commouebitur*). These equivalences are shown in Example 59. For three notes high–low–high, there are direct equivalences at *suo*, *medio*, C *commouebitur*, *Fluminis*, C *impetus*, C *altissimus*. On those occasions where La is left out of this list, it is simply because the neumes have been written in a separated form, as separate *uncini* (*altissimus*) or as part of a longer continuous neume (*commouebitur, impetus*). These equivalences are shown in Example 60.

Signs for longer note groups are also present in W, written as joined forms of these shorter forms: the neume at *medio* can be read as two forms for two falling notes joined together in the middle, exactly like the La neume at the same point. All the longer graphs in *suo* are built up in this way, by writing forms representing shorter groups without separation. In this long melisma involving the repetition of short note groups with many immediately repeated pitches, the lack of a sign to indicate a repeated pitch contrasts directly with the use of the *oriscus* in the notations of La and C.

In the script written in W there is only one further neume with a shape distinct from those built up from the basic neumes, the *quilisma*. Graphically this is very similar to the sign in C, except that it is written in a curved form, without a sharp turn (*uultu, letificat*, and incorporated into a longer sign at *eius*).

7.4 THE IDEA OF A *TONORTSCHRIFT*

Working through the Palaeofrankish neumes written over the Greek *Doxa* in BNF lat. 2291, notated in the late ninth century, Handschin wrote 'Das Prinzip dieser Neumenschrift ist klar:

dem Tonhöhen-Grad entspricht der höhere oder tiefere Ort auf dem Pergament; sofern die (aufsteigende oder absteigende) Linie verwendet wird, dient sie dazu, solche Orte zu verbinden, sie ist aber nicht an sich ein Tonzeichen.'[8] Handschin had found an example of Palaeofrankish script that happened to be highly diastematic, in the same way that many passages of notation, not only in the W fragments but also in La and C, can be considered close to being diastematic. This allowed Handschin to create the idea of a 'Tonortschrift', a type of script in which, rather than there being signs that by convention symbolized particular types of melodic movement (as in all the other known neumatic scripts), there were no fixed signs. His hypothesis was that the Palaeofrankish script did not need to have neume forms, since positions on the parchment could be isolated (by writing a point) or joined (by writing lines). This was how Treitler understood Handschin's view: 'the sign traces a movement from one position to another in a space which corresponds to the tone space'.[9] This was a clever solution to a significant problem that faced Handschin at this stage: he had absorbed the old accent theory, with all its baggage.[10] Accordingly, musical notation had begun by using 'accents', which did not require to be placed at different heights on the page; more importantly, the *uirga* neume characteristic of Frankish notations was believed to be a sign derived from the prosodic *accentus acutus*. If that theory was to stay in place, then the Palaeofrankish form that looked like a *uirga* but which represented two rising notes could not be a 'note sign' (*Tonzeichen*), but had to be explained in another way.[11] The 'joining the dots' explanation allowed him to conceptualize a way of recording sounds in writing that was not primarily dependent on a system of recognized forms.

The difficulty of characterizing Palaeofrankish notation as a *Tonortschrift* was first exposed by Atkinson, when he compared the notations for the Introit *Ad te leuaui* added in the margins of the sacramentary Düsseldorf Universitätsbibliothek D1 at some time in the tenth century.[12] His argument was made at the most simple level: were the signs written to join positions on the parchment representing higher and lower pitches, then the length of, for example, the ascending signs would be variable, different for an ascent of a tone and an ascent of a fourth. Thus Atkinson used this notation to demonstrate that the neumes did 'not serve as links between positions on a diastematic matrix',[13]

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[8] 'The principle of this neumatic script is clear: the higher or lower position on the parchment corresponds to the pitch-level; insofar as a line (rising or falling) is used, it serves to link such positions, but it is not in itself a notational character.' Handschin, 'Eine alte Neumenschrift', 78; this translation from Atkinson, '*De accentibus*', 34.

[9] Treitler, 'Communication', 571. See also Max Haas, *Musikalisches Denken im Mittelalter. Eine Einführung* (Bern: P. Lang, 2005), 371ff.

[10] This critique of Handschin's work is almost entirely dependent on Atkinson, '*De accentibus*', and *The Critical Nexus*.

[11] 'Also keine Virga = accentus acutus im Sinne der Grammatiker und solcher Neumenschriften wie die italienische, alemannische, französisch-normannische, englische!' Handschin, 'Eine alte Neumenschrift', 78–9.

[12] Hartmut Hoffmann proposed the third quarter of the tenth century for the complex of hands making additions to this sacramentary at Essen: see his *Schreibschulen und Buchmalerei. Handschriften und Texte des 9.–11. Jahrhunderts*, Schriften der MGH 65 (Hanover: Hahn, 2012), 27 and 48–9.

[13] Atkinson, '*De accentibus*', 40; *The Critical Nexus*, 110.

and remarked that 'heightedness, not to mention diastematy, is clearly not the persistent, commanding feature of this notation'.[14]

Handschin himself understood that somewhere behind his explanation of the notation in BNF lat. 2291 there remained a critical problem. Later in the same study he argued that diastematic behaviour was a possibility for any type of neumatic script,[15] rather than a fundamental tool differentiating script types (even if one group of scripts using the principle of placing on the parchment was inherently more diastematic than those that used a *uirga* to represent pitch level in a symbolic manner).[16] Thinking about neumatic notation in terms of the whole period of its use, thus into the twelfth century, Treitler followed Handschin in describing diastematy not as a property of scripts, but as 'a way of writing them',[17] and went on to explain that 'in some cases that may be a matter of historical development – a scriptorium converting to diastematy'. Such changes are certainly part of the later history of neumatic notation.

Notation in the W fragments shares with the notations of La and C a procedure for positioning neumes in the space above the text following the zigzag pattern; they are not brought down to a common level at the beginning of each syllable, as in notations written in Frankish script. But, as in Atkinson's examination of the notation in Düsseldorf D1, the evidence of ways in which neumes are placed in the script used in W directly contradicts Handschin's conclusions about the basic character of Palaeofrankish script (or form of notation, if it was not a set script): this *can* be written fairly precisely, but no more so than the scripts written in La and C, and precise diastematy was often impossible to achieve. If the script was not aiming at precise diastematy, but at showing the gestures of movement of the melody up, down and at an equal pitch – as in every other neumatic script – then the proposal that the neumes written in this script simply join positions on the parchment becomes redundant. If a neume is thought of as joining two positions representing specific pitch levels, but it looks the same as another neume that represents two different pitch levels, then we are dealing not with a pragmatic, highly variable writing procedure, but with forms that have become systematized in the way that they signify melodic phenomena.

Returning to the notation for *Doxa en ipsistis* in BNF lat. 2291, the degree of diastematy expressed here is really no more nor less than in W: the degree of inexactness can be seen, for example, in the repeated melodic patterns at *yrini en anthropis* (Example 61).[18] There has been little attempt made here to align the beginning of the third and fifth neumes, each for two falling notes, with the relevant level within the second and fourth neumes showing rising

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[14] Atkinson, '*De accentibus*', 35; *The Critical Nexus*, 110.

[15] 'jede Neumenart mehr oder weniger diastematisch sein kann.' 'Eine alte Neumenschrift', 81.

[16] *Ibid.*, 81.

[17] Treitler, 'The Early History', 264.

[18] This pitched transcription of the melody recorded in lat. 2291 has been newly established by Charles Atkinson: see his 'Doxa en ipsistis Theo: Its Textual and Melodic Tradition in the "Missa graeca"', in DiCenso and Maloy (eds.), *Chant, Liturgy, and the Inheritance of Rome*, 3–32.

Example 61 The opening of *Doxa en ipsistis* (BNF lat. 2291 fol. 16r).

Do- xa en ip-sis- tis the-o

ke y- pi- gis y- ri- ni en an- thro- pis eu- do- ky- a

e- nu- men- se e- u- lo- gu- men- se

Pros-ky- nu- men- se do-xo-lo-gu- men- se

eu- ka- ris-tu- men- sy dy- a- tin

groups of four notes; equally, the end of the third neume has been pulled down into the area occupied by the text (where there was empty space), while the end of the fifth neume was constrained by meeting the top of the text. Then the last neume of the fourth written line, for *eudokya*, has the same neume, probably for the same pitches, and this time it is pulled down almost to the writing line.

Of course, one of the characteristics of this *Doxa* notation that had put Handschin onto the scent of a *Tonortschrift* was variation in ways of writing similar constellations of pitches, for two rising or two falling notes, or for three notes low–high–low. For two rising notes, this scribe has written an upward stroke, slightly curved (the first graph over *theo*); also a horizontal dash continuing in an upward element (*ke ypigis*). For two falling notes this scribe has written a descending stroke, slightly curved (*theo*); also a horizontal

dash continuing in a downward element (*yrini en anthropis*); also a dash with a point below (the end of *ypigis*). For low–high–low he has written a dash attached to an inverted v (*ipsistis*, the beginning of *ypigis*); also a dash attached to an arch (*enumense*); also an inverted v with a long upward element and a shorter downward element (*dyatin*).[19] In terms of pitch all three of these represent a movement upwards and then downwards of a tone: if a difference was intended, it was not concerned with pitch. It is likely that the scribe was aware of ways of showing length/emphasis in other notations, and simply using the same techniques to differentiate neumes here. Whether or not these techniques were present in the earliest Palaeofrankish notations is something we cannot establish, given the lack of earlier examples.

7.5 PALAEOFRANKISH, LOTHARINGIAN AND BRETON SCRIPTS COMPARED

Once the idea of a *Tonortschrift* is set aside, we can reconsider whether Palaeofrankish notations represent a script with an established sign repertory and in what way that sign repertory relates to the Lotharingian and Breton scripts. Although the notations of La and C have not been compared here to many other notations in the same script families, the notation in these books is so extensive that systems of notation based on a repertory of signs could be said to have been demonstrated. For the script represented in the rather briefer fragments of W, there is certainly a repetition of practice across the four pages, with notations for all or part of eighteen of the twenty-one chants recorded. That is not insubstantial. Beyond this the same basic forms – for single notes (point and dash), for two rising notes and for two falling notes, for three-notes low–high–low and high–low–high – are present in the short notated entry in BNF lat. 2291. Variation in signs for three notes in the constellation low–high–low in the BNF lat. 2291 entry should not therefore be directly linked to 'a lack of consciousness of a sign system',[20] but may partly depend on deliberate attempts to indicate articulation, as well as other factors. In other words, however the Palaeofrankish script was conceived, by the time we can see it – in notations made in the late ninth and early tenth centuries – it is as systematic in its use of a sign repertory as any other neumatic script.[21]

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[19] Handschin remarked on the large number of forms for the melodic movement low–high–low, and began to consider whether this notation was 'rhythmic', without coming to firm conclusions: 'Eine alte Neumenschrift', 77–8.

[20] As it was described in Susan Rankin, 'Carolingian Music', in Rosamond McKitterick (ed.), *Carolingian Culture: Emulation and Innovation* (Cambridge University Press, 1993), 274–316, at 302.

[21] Including notations written in the tenth and eleventh centuries in his study, Arlt has demonstrated the existence of differentiated West and East Palaeofrankish notational habits. See his 'À propos de la notation "paléofranque"'.

Example 62 Four basic signs in Palaeofrankish, Breton and Lotharingian scripts.

	Palaeofrankish	Breton	Lotharingian
low–high	/	⌐	∫
high–low	\	⌐	¹
low–high–low	∧	⌒	∫
high–low–high	∨	∨	∨

More significant when considering the relation between these three scripts is the fact that the repertory of signs in the W notations is more limited than in any other script already considered: here there is no *oriscus* and thus none of the forms that can be built up using the *oriscus*. Most striking is the lack of the *uirga* in any form or situation, even in the very limited usage typical of Lotharingian script: this sets the sign repertory of the Palaeofrankish script apart from all others. Yet these differences need to be considered in light of what the Palaeofrankish script actually shares with other scripts: placing the neumes over the syllables in short, articulated groups, using the height metaphor in the most general sense (movement of the pen up and down the page in relation to movement of sound to higher and lower pitches), and finally, relations between basic forms, written out in joined rather than separated forms. Indeed, the graphic relation between the four basic Palaeofrankish forms written in W and those written by the scribes of C and La is conspicuous: each of the Palaeofrankish forms can be translated into the equivalent Lotharingian form through the addition of a short horizontal line at the beginning (Example 62). The relation between the C signs and those of W can be described in similar terms, except that the scribe of C wrote neumes in a more inclined, less perpendicular, fashion. The fact that one sign set can be transformed into another by effectively making the same graphic alteration to each of four basic forms – either the addition of a horizontal or slightly angled or curved line, or its removal – is surely evidence of a direct connection between these scripts. When a scribe set out to design a new kind of music script, he/she simply altered all the basic forms in the same fashion, allowing a clear graphic differentiation between the new script and the old.

Without making any assumptions about which came first, there can be no question of these three music scripts having been separately developed: the inventor of one or more of these scripts surely had knowledge of one of the others. There are strong arguments for the precedence of the Palaeofrankish script over the Lotharingian and Breton: first, that the transformation is much more likely to have consisted in the addition of strokes than in their removal; second, that the repertory of signs in the Lotharingian and Breton scripts is larger than in the Palaeofrankish; and third, that the *uirga* sign is not present in the Palaeofrankish script. Indeed, there is in the Palaeofrankish script a complete absence of the principle that a sign can, by convention, represent a higher pitch level. It is therefore likely that the Palaeofrankish notations written in W are related to a script that was invented before the Lotharingian and Breton scripts, even if present in W in an updated form. This script was written moving neumes up and down in the space above the text – both the Lotharingian and the Breton scripts were written in this way as well.

If this is the correct order of invention, then both Lotharingian and Breton scripts took from the Palaeofrankish a set of basic forms for two- and three-note neumes. The most significant alterations made for both of these new scripts at this moment of change were for the representation of single notes. In the Lotharingian script, a new shape, the *uncinus*, allowed reliance on an extended stroke rather than a simple point as the main way of writing a single note; in the Breton script the technique of writing single notes as a point or an upward stroke, allowing differentiation of pitch relations, was adopted from the Frankish script system. The intrusion into these scripts of an essentially foreign technique, associated with a different approach to the placement of neumes above the text, then encouraged the use of that different approach in the Breton script when considered useful or necessary. The new Lotharingian script also adopted the *uirga*, but only in a limited way, and sometimes as a special rather than foundational sign to indicate articulation. The Lotharingian script included another new idea, that a special form could indicate a note at a repeated pitch; this could be written on its own (*oriscus*) or be linked with other neumes to create a series of new forms. Finally, in the Lotharingian script a technique for clarification of delivery was developed through joining and separating strokes in neumes for more than one note. Although some of the basic forms in the Breton script are also developed from the concept of 'joined equals faster' (or less emphasized) and 'separated equals slower' (or more emphasized), the practice was not worked out as extensively as in the early examples of Lotharingian script.

8

Music Scripts: Conclusions

At the beginning of this investigation of relationships between extant scripts, all those now considered were shown to share basic graphic approaches and characteristics: beyond setting out short graphic marks in ways that clarified their relation to individual syllables, and sharing a conception of the space above the text as intelligible in relation to high and low notes, there was also enough evidence of shared signs (neume forms and their meanings) to justify further enquiry into their relation. What has now been uncovered reveals a complex web of relations – suggesting a lively exchange between scribes, the working out of shared ideas in different ways, and the design of new signs and forms as well as redesign of old signs and forms. With this evidence it is therefore possible to reflect on the pre-history of these various scripts and to explore issues of design and development: the former is the business of the current chapter and the latter will be taken up again in the next.

Two interrelated characteristics of these scripts divide them into clear groups: the way in which neumes are positioned in the space above the text, and the way in which the point/upward stroke (*punctum/uirga*) relation is used. While all the scripts represented in notations reviewed so far show a definite understanding of the height metaphor – the relation between the pitch of an individual sound, lower or higher, and the placement of a sign in the space above the text, lower or higher – those ways in which that relation is handled are varied, with two quite distinct approaches represented in the majority of scripts examined. A scribe could write neumes in a zigzag fashion, moving them up and down above the text according to the relation of each neume to that preceding: higher, at the same pitch level, or lower. Although occasionally the result could be read fairly precisely over a range of up to a fourth, the more usual result was clarity about the direction of movement rather than intervallic steps. The other approach was less concerned with linking position and pitch: a scribe would write neumes in long strings – in lines that could be straight and inclining upwards (diagonals), or curving upwards – with the beginning of each group set at a consistent level above the text, and in this way explicitly linked to individual syllables or (in situations where less space was available) to individual words. Even in the examples of scripts that follow this model, there is ample evidence of scribes' awareness of the height metaphor, often

where a series of syllables are sung to single notes. In that sense, use of the diagonal-strings procedure cannot be attributed to a lack of knowledge of how the height metaphor might be reflected in writing, but must rather be considered a deliberate choice. The Palaeofrankish, Lotharingian and Breton scripts, as well as the Aquitanian script written by the first scribe of Albi 44 – which has not been studied here – belong to the 'zigzag' group. The scripts written in the Autun, Leipzig and Graz manuscripts – all of West or mid-Frankish origin – and the scripts written in the Bobbio and Sankt Gallen manuscripts, thus all those studied here under the heading 'Frankish', belong to the second group. Finally, scribes writing Breton script could occasionally use this other, diagonal-strings, procedure, according to circumstances: this appears to have been a deliberate choice, suggesting that individual scribes were well aware of these differing procedures and of the situations in which one could be more practical than the other.

Those ways in which the neumes are positioned in the interlinear space are closely associated with the presence and use of one specific sign, the *uirga*: for those scripts based on diagonals rising from the relevant syllable, the *uirga* had a crucial significance, since it became the bearer of pitch information. Although in these notations neumes *could* be placed differentially in the interlinear space in relation to pitch, this technique was generally only used when single notes for syllables were involved – where there was no long string of neumes to be articulated. Otherwise, neumes within melismas were positioned in the interlinear space not according to their pitch relation to the preceding sign, but by their place in a series. In those circumstances a sign that could indicate a rise or a fall – through its graphic distinction from another sign for a single note – was highly effective. The combination of rising diagonals and the point/*uirga* distinction is characteristic of the whole family of what I have named here as 'Frankish' scripts, written widely across Europe, including in West and middle Francia (represented by the Autun, Graz and Leipzig manuscripts) and in East Francia, including northern Italy (represented by Sankt Gallen and Bobbio). This large script family can itself be divided into two groups, determined by the presence or absence of the curved form for two rising notes: this is not present in the West Frankish notations, which have only the angled form, whereas the East Frankish notations have both forms.

In the group of scripts in which neumes are written in positions related to their pitch – higher, lower, or at equal positions on the page – the *uirga* sign is known, but is not used in the same ways as in Frankish notations. In the notations written in C, there are passages that resemble the techniques of the Frankish group, but there are also passages in which the neumes move up and down in zigzags. In this script the *uirga* is used much more sparingly than in Frankish script: when the melody is to move up, a *uirga* sign can be written, but it can then be succeeded, at the higher level arrived at, by a point. In other words, the *uirga* signifies movement to a higher pitch rather than simply 'high pitch'. In the script of La, the *uirga* is also linked to movement upwards, although its presence in this notation is severely limited, and it is never used for single notes.

All the further techniques of refinement and stylization – the joining and separation of forms, the range of ways of writing and thus differentiating forms for specific musical gestures, the inclusion of detail and the invention of new signs – can be either more or less characteristic of individual scripts, linked with regions, institutions, or individual scribes. These are procedures based on ideas that could become more or less characteristic of specific scripts – especially when an individual institution gained a leading prestige; nevertheless, ideas could always be shared, and applied to different script types. The procedure of joining (to suggest a more continuous, faster delivery) and separating (to suggest a slower, more articulated delivery) is one of the most prominent of these and most characteristic of the Lotharingian script. The assimilation of a sign that would indicate that the note was at the same pitch as the one that preceded it – named in eleventh-century neume tables as an *oriscus* – is another such strategy: this could be used to a greater or lesser degree and then incorporated within other forms. The important point here is that once a scribe had worked out how to use a new sign or idea, another could copy that, and then another scribe could incorporate another new idea, and thus changes and historical layers would be built up. But a scribe working just down the road from the first might not be aware of a new strategy incorporated by his neighbour, and thus his musical script, once quite similar to that of the first (more progressive) scribe, would to our eyes look rather different. Strategies for developing scripts must have been quickly available to many scribes, whatever script model had come into their hands; any cantor who could easily relate what he saw to the melodies he had learnt would have quickly noticed and understood changes such as joining and separating, since these are writing techniques which easily communicate their meaning to the reader.

Up to this point, information about the relation between scripts discovered through the consideration of parallel neumations confirms one aspect of the diagram proposed by Hourlier and Huglo in 1957: they put the scripts described as 'notations-points' and 'notations-mixtes' (Palaeofrankish, Aquitanian, Breton and Lotharingian) on one side, and the scripts described as 'notations-accents' (French, those from Sankt Gallen, and German) on the other. The hypothesis of two large families of scripts is certainly confirmed by this investigation, and it is also clear that the Palaeofrankish script, in whatever form it took at an early stage, lies behind the Lotharingian and Breton scripts.

Crucially, however, there was evidently contact between these two separate script families: some foundational characteristics of the Frankish script were drawn into the Lotharingian and Breton scripts, albeit in different ways and not present as primary elements. While Frankish techniques penetrated the Lotharingian script less than the Breton, knowledge of those techniques on the part of the Lotharingian script designers is nevertheless unambiguous. The other significant difference between the Lotharingian and the Breton scripts is the extent to which Lotharingian script could be written in such a way as to record more details about length, emphasis and articulation: if it bears saying

in such a way, the Lotharingian is a more 'developed' script than the Breton. In the large family of Frankish scripts, there are also different groups, above all a division between West and East Frankish ways of writing it that must date from a comparatively early moment in the diffusion of the script. Italian ways of writing Frankish script link up with the East Frankish, while the Old Hispanic script – at some stage developed from the West Frankish – was elaborated to such a degree that it is not really possible to work out at what stage the designers of this script started work. As in the case of the Lotharingian script within the Palaeofrankish family, so also for the script written at Sankt Gallen in the Frankish family: this exemplifies an extremely refined, developed form of Frankish script. Techniques of modification, calligraphic refinement and the exercise of control in writing allowed individual scribes to work with the potential of the scripts they had learnt (or not, in the case of some scribes considered above): it was the process of exploiting those potentials that encouraged change and development.

At the end of this long exercise of comparison between different ninth-century music scripts, we are left with two vital questions: if there were two large families – that can be named as Palaeofrankish and Frankish – which came first? Why was it necessary to create the Lotharingian and Breton scripts, as combinations of the two? Why not abandon one for the other? The most crucial difference between these two families lies at the most elementary level: how to write a sign for a single note over the text. In one family that task was accomplished using a point, its placement in the space above the text denoting its pitch. In the other family that task was accomplished through the use of two distinct signs, one indicating a lower note, the other a higher note, without needing to read the height of the sign above the text. For one of these signs, the simple point was used, and for the other, an upward stroke, the so-called *uirga*. This same stroke was used in the Palaeofrankish script with an entirely different meaning in relation to pitch: not one note but two notes, in a rising relation. That is the essential clash between these two script families, the use of the upward stroke in such contradictory fashions. How that stroke came to be used as a musical sign at all will be the starting point for the next chapter.

9

Signs and Meaning

9.1 GRAMMAR AND THE CONTROL OF SOUND

Grammaticae initia ab elementis surgunt, elementa figurantur in litteras, litterae in syllabas coguntur, syllabis conprehenditur dictio, dictiones coguntur in partes orationis, partibus orationis consummatur oratio, oratione virtus ornatur, virtus ad evitanda vitia exercetur.[1]

The beginnings of grammar arise from elements; elements are shaped into letters; letters are assembled into syllables; out of syllables an utterance is constructed; utterances are joined together into parts of speech; out of the parts of speech a discourse is completed; by means of discourse, virtue is enhanced; virtue is practised for the avoidance of vices.

The ancient discipline of grammar was about language, from its smallest parts to the formulation of an oration which, well made, would have moral force. Inherent in this passage from Varro's *De lingua latina* (composed between 47 and 45 BCE)[2] is the relation of grammar to language expressed in writing; rather more prominent is the expression of language in sound, evoked in the words *dictio* and *oratio*. Grammar was presented as the study of the control of articulate sound, the regulation of language expressed in speech.

In a manual by the best-known Roman grammarian of the fourth century, the significance of writing in relation to regulated language emerges more explicitly:

DE VOCE Vox est aer ictus, sensibilis auditu, quantum in ipso est. Omnis uox aut articulata est aut confusa. Articulata est, quae litteris conprehendi potest; confusa, quae scribi non potest.[3]

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[1] *Grammaticae Romanae fragmenta*, ed. Hyginus Funaioli (Leipzig: Teubner, 1907), no. 237.

[2] Varro's formulation is dependent on older Greek sources: see Donatus, *Donat et la tradition de l'enseignement grammatical. Étude et édition critique*, ed. Louis Holtz (Paris: CNRS, 1981), 58.

[3] Donatus, *Ars maior* I.1, ed. Louis Holtz, in his *Donat et la tradition*, 603. On the more complex scheme proposed by Priscian, see below, p. 295.

> *OF THE VOICE Voice is air set in motion, sensed by the hearing, as much as is in itself. Every voice is 'articulate' or 'confused'. Articulated voice is that which can be expressed in letters: confused [voice] is one which cannot be written.*[4]

In Donatus's *Ars maior*, it is the property of being able to be written in letters that defines a sound as articulate and thus subject to grammatical operations. The first book of the *Ars maior* has sections on vox (*De uoce*), letters (*De littera*), syllables (*De syllaba*), feet (*De pedibus*), tones (*De tonis*) and punctuation (*De posituris*). This introduction therefore led a reader from the phenomenon of controlled sound through the fundamental elements of language (letters, syllables) to aspects of the enunciation of those elements, in time, intonation and articulation. It is all about the expression of language in sound. This central theme is accompanied by extensive commentary on those ways in which writing can represent sounding language. The closing lines of the passage on letters illustrate the weaving together of these two topics:

> Accidunt uni cuique litterae tria, nomen, figura, potestas. Quaeritur enim, quid uocetur littera, qua figura sit, quid possit.[5]

> *To each letter there pertain three things: name, shape and power.[6] For the question is, how we define 'letter', what shape it has, and what it can do.*

A letter has a name, a shape and a power. Clarification of this trio of attributes is provided in other, more discursive, grammatical treatises: the name 'is what is said or enunciated', the figure 'what is beheld [by a reader] or designated with a written mark', the power 'the strength in metrical reckoning'.[7] Explanations could vary: in a gloss in a late eighth-century copy of the first part of Donatus's book I made at Sankt Gallen, *potestas* is said to relate to thought. Nevertheless the separation between visual and aural perception remains intact: 'the figure concerns the eye' and 'the name the ears'.[8]

The fifth passage of Donatus's book I, 'de tonis', provides a description of written signs that indicate how specific words should be enunciated:

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[4] Latin *vox* = Greek *phone*; on the poverty of Latin in expressing the various aspects of *vox* (voice, phoneme, sound, tone, utterance, pitch), see Calvin M. Bower, '*Sonus, vox, chorda, nota*: Thing, Name and Sign in Early Medieval Theory', in *Quellen und Studien zur Musiktheorie des Mittelalters* III, ed. Michael Bernhard, VMK 15 (2001), 47–61.

[5] Donatus, *Ars maior* I.1, ed. Holtz, 605.

[6] Parkes translates *potestas* as 'phonemic referent': Malcolm B. Parkes, 'The Contribution of Insular Scribes of the Seventh and Eighth Centuries to the Grammar of Legibility', in *Grafia e interpunzione del latino nel medioevo*, ed. A. Maierù (Rome: Ateneo, 1987), 15–29; rep. in Parkes, *Scribes, Scripts and Readers* (Aldershot: Scolar Press, 1992), 1–18, at 16.

[7] Diomedes; see Martin Irvine, *The Making of Textual Culture: 'Grammatica' and Literary Theory, 350–1100* (Cambridge University Press, 1994), 97ff.

[8] 'Figura pertinet ad oculos. Nomen ad aures. Potestas ad cogitationem.' CSG 230, p. 550.

Acutus accentus est nota per obliquum ascendens in dexteram partem /, grauis nota a summo in dexteram partem descendens \, circumflexus nota de acuto et graui facta ︿.[9]

An acute accent is a nota *[a written mark] ascending toward the right at an angle* /; *a grave accent is a* nota *descending toward the right* \; *a circumflex accent is a* nota *made from acute and grave* ︿.

Such signs are used for clarification, since incorrect enunciation of a word might produce ambiguity; moreover, the 'rule of accents' itself is 'often broken as a result of punctuation or pronunciation or the need to avoid ambiguity'.[10] In this passage the text is formulated in such a way that it can be presented with or without sight of those written signs with which it deals: varieties of accent, the hyphen, diastola, apostrophe, dasia and psile. Among the earliest surviving manuscript sources of the text some do not have the actual signs, while in others the signs were copied as part of the main text, and in others still the signs were written in later. In a copy made at Sankt Gallen in the late eighth or early ninth century, and in which the marks were copied at the same time as the main text, these special signs are written in a large size, and within the text space itself (rather than above).[11]

Finally, Donatus's sixth passage reverses the relation of sound and writing that underlies the previous sections and uses written signs as a means to organize an explanation of the hierarchy of parts in a discourse: the *distinctio* indicates the end of a full sentence (*plena sententia*) and is therefore placed where the meaning is complete; the *subdistinctio* and the *media distinctio* indicate shorter passages, the first a minor medial pause, where the sense is incomplete, the second a major medial pause, where the sense is complete but the meaning is not.[12] In the case of both the *subdistinctio* and the *media distinctio*, Donatus's explanation of where a written sign should be placed depends on a description of speaking, thus of behaviour in sound:

Subdistinctio est, ubi non multum superest de sententia, quod tamen necessario separatum mox inferendum sit ... Media distinctio est, ubi fere tantum de sententia superest, quantum iam diximus, cum tamen respirandum sit.[13]

A subdistinction is when there is not much of the sentence remaining, which however, necessarily separated, must subsequently be added ... The medium distinction is when there is about as much more to say as has already been said, but we need to take a breath.

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[9] Donatus, *Ars maior* I.5, ed. Holtz, 610.

[10] 'Accentuum legem uel distinguendi uel pronuntiandi ratio uel discernendae ambiguitatis necessitas saepe conturbat.' Donatus, *Ars maior* I.5, ed. Holtz, 610.

[11] CSG 876, p. 348.

[12] Parkes, *Pause and Effect*, 13.

[13] Donatus, *Ars maior* I.6, ed. Holtz, 612.

Even if Donatus – as the Latin grammarian most widely read in the late antique period and the early Middle Ages – represents a central figure, he is only one of many.

In a long tradition of the study of grammar by Greek and Latin scholars, there were many divergences of approach, emphasis and interpretation. Yet the dualities of expression (speaking and writing) and of sensory perception (hearing and seeing) are wound together throughout. It has been argued that the philosophy of language transmitted by the handbooks of the *artes grammaticae* privileges writing,[14] and that 'the form of speech objectified by grammatical discourse is speech that is already marked by the characteristics of writing'.[15] Yet, whatever the relation of articulate speech to writing, the perception of the sound of speech is never 'banished' from grammatical handbooks;[16] rather, it remains the starting point for all considerations, as Donatus's definition of '*vox*' as beaten air illustrates. Indeed, in the context of the current discussion of the representation in writing of musical sound, the most interesting aspect of the grammarians' treatment of language as sound and as something which can be written is that there are many ways of helping the latter to approach the former, of reflecting in writing qualities of the sound of speech.

9.2 METAPHORS FOR SOUND

Among qualities of sound that may be indicated in writing, that which concerns the inflection (or 'modulation') of sound within a word is handled by Donatus under the heading 'de tonis'. Latin *tonus* is a word that has a long and broad background in Greek antiquity, including musical theory – both Cassiodorus and Isidore explained its relation to the Greek transposition scales.[17] Besides its significance as a term associated with the systematization of discrete musical sounds, however, Latin *tonus* developed another sense in the context of discussions of language.[18] By the time Donatus composed the *Ars maior*, *tonus* was being used directly in relation to Greek '*prosodia*': in this it retained the idea of modulation primarily associated with pitch and intensity, but indicated the behaviour of sound in the enunciation of individual words. As Isidore states:

> Latini autem habent et alia nomina. Nam accentus et tonos et tenores
> dicunt, quia ibi sonus crescit et desinit.[19]

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[14] Irvine, *Textual Culture*, 91ff.

[15] *Ibid.*, 92.

[16] See *ibid.*, 92: 'speech and writing become convertible terms, writing constructed as the object of grammatical discourse, and speech is banished to the realm of ephemera'.

[17] Atkinson, *The Critical Nexus*, 39.

[18] On the multiple meanings of '*tonus*', see Charles Atkinson, '*Tonus* in the Carolingian Era: A Terminological *Spannungsfeld*', in *Quellen und Studien zur Musiktheorie des Mittelalters* III, ed. Michael Bernhard, VMK 15 (2001), 21–46.

[19] Isidore, *Etymologiarum*, ed. Lindsay, I.xviii.

> *Latin speakers also have other names for it. They say 'accent' and 'tones' and 'tenors',[20] because at that place the sound increases and falls away.[21]*

The idea of sound alteration of some kind during the enunciation of a word of more than one syllable has to be inferred in Donatus's own passage *De tonis*, since he assumes knowledge of the phenomenon and addresses himself immediately to the number and placing of accent signs in words of single, double, triple and quadruple syllables. Even if the words used by Isidore – 'increasing' and 'decreasing' – are metaphors that may be read in more than one way in relation to sound, they provide a starting point for consideration of what written accents might signify, and in what way a reader might understand them in relation to sound. Isidore clarifies this with another set of metaphors:

> Acutus accentus dictus, quod acuat et erigat syllabam, gravis, quod deprimat et deponat. Est enim contrarius acuto. Circumflexus, quia de acuto et gravi constat.[22]

> *The acute accent is so called because it sharpens and raises the syllable; the grave accent, because it depresses and lowers, for it is the opposite of the acute. The circumflex is so called because it consists of an acute and a grave.[23]*

Now we find 'sharpening' (*acuere*) or 'raising' (*erigere*) and 'pressing or pulling down' (*deprimere, deponere*). These types of description have been explained as the result of the projection of a spatial image onto human perception of sound.[24] This spatial abstraction can be traced back to the Greeks, who spoke of '*movement* of the voice, the *place* of a sound, and above all that of an interval conceived as a *distance* between two sounds'.[25] In the Greek theory of music passed on by Boethius in the *De institutione musica*, spatial representation is

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[20] Here the word 'tenor' appears exactly as used by late antique grammarians, as a direct alternative to 'tones', and to encapsulate the three prosodic accents: see Dagmar Hoffmann-Axthelm, 'Tenor I.1', in Hans Heinrich Eggebrecht and Albrecht Riethmüller (eds.), *Handwörterbuch der musikalischen Terminologie* (Wiesbaden: Steiner, 1971–2006).

[21] This is an altered version of the translation in Isidore, *The* Etymologies, trans. Barney *et al.*, 49, where '*tonos*' is translated as 'pitch'.

[22] Isidore, *Etymologiarum*, ed. Lindsay, I.xviii.

[23] Isidore, *The* Etymologies, trans. Barney *et al.*, 49.

[24] Duchez, 'La réprésentation spatio-verticale' and 'Description grammaticale'. On spatial orientation in Greek music theory, see also *Greek Musical Writings II: Harmonic and Acoustic Theory*, ed. Andrew Barker (Cambridge University Press, 1989), 8ff; and on cross-domain mapping, as it is exhibited in Greek music theory, Lawrence M. Zbikowski, *Conceptualising Music. Cognitive Structure, Theory and Analysis* (Oxford University Press, 2002), esp. Ch. 2.

[25] Duchez, 'La réprésentation', 58: 'Les Grecs avaient pourtant utilisé un certain nombre de notions de caractère spatial: ainsi les concepts aristoxéniens du *mouvement* de la voix, de *lieu* d'un son, et surtout celui d'intervalle conçu comme une *distance* entre deux sons.'

used to describe an organized system of musical sounds, using the descriptions 'acuteness' (*acumen*) and 'graveness' (*grauitas*):

> Sunt autem tropi constitutiones in totis vocum ordinibus vel gravitate vel acumine differentes. Constitutio vero est plenum veluti modulationis corpus.[26]

Of course, as descriptions of something that has no material substance,[27] *acumen* and *gravitas* are themselves metaphors, and their content is not immediately concerned with measures of pitch, but more directly with what we might now call tone quality, 'shrillness' and 'heaviness'. In the context of Boethius's remarks, however, these descriptions are clearly intended to indicate pitch measurements, as becomes clear in Bower's translation:

> Tropes are systems that differ according to highness or lowness throughout entire sequences of pitches. A system is, as it were, an entire collection of pitches.[28]

Although Duchez argues that the height (or verticality) metaphor, linking '*acutus*' and '*gravis*' with notes of high and low pitch, was only implicit in Boethius's writing,[29] it is difficult when confronted with this explanation of a systematized sequence of sounds (akin to a scale) to believe that whatever is being described using the words 'acumine' and 'gravitate' is not the same phenomenon in sound (or is being perceived as the same phenomenon in sound) as that described by Isidore – in his case in a less wide spectrum and without systematization beyond the contrast of *acutus/gravis*. The idea of a relation between note pitches and physical height and depth in Boethius's writing is complicated by the fact that he was dealing with sounds made by instruments, and thus with names for notes that described finger positions – with the notes of the lowest pitches sitting at a physically higher point on the instrument, and vice versa, the notes of highest pitch sitting at a physically lower point on the instrument. That determined the layout of diagrams of successive pitches, written out with the lowest pitched note (*proslambamenos*) at the top of the scheme as laid out on a page and the highest pitched note (*nētē hyperboleon*) at the bottom.[30] In other words, in Boethius's theory, a spatial image for measuring out a system of pitches was very present, but the Greek theory he inherited used words for high and low in a different way, and – perhaps in consequence – the diagrams for pitch systems found in Carolingian manuscripts of his treatises did not show the highest

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[26] Boethius, *Anicii Manlii Torquati Severini Boetii De institutione arithmetica, libri duo; De institutione musica libri quinque*, ed. Gottfried Friedlein (Leipzig: Teubner, 1867), IV.15 (p. 341).

[27] Augustine, *Confessions*, ed. James J. O'Donnell, 3 vols. (Oxford: Clarendon Press, 1992), XII.29 (I p. 181).

[28] Boethius, *Anicius Manlius Severinus Boethius: Fundamentals of Music*, trans. Calvin Bower, Music Theory Translation Series (New Haven, CT: Yale University Press, 1989), IV.15.

[29] Duchez, 'La réprésentation', 59.

[30] See the diagram of the greater perfect system in Boethius, *Fundamentals of Music*, I.20 (Figure A.16); this scheme is represented with pitches written on five-line staves in Atkinson, *The Critical Nexus*, 12. The tetrachord system is set out in *Greek Musical Writings II*, 12–13.

pitched notes highest on the page but exactly the reverse.[31] The issue is an important one, since Duchez links the emergence of the height metaphor in Carolingian musical notation not with the main tradition of Latin music theory but with the grammatical theory of accents.[32] In this grammatical tradition, she argues, the use of words that express height was closely linked to writing,[33] since the written sign for the acute accent slanted up the page and the written sign for the grave accent slanted down.

To this general outline of the exchange of metaphors for sound between grammar and music and of ways of describing the modulation of sound in the late antique period more detail and shape can be added by reading Carolingian commentaries on Donatus's *Ars maior* and on Martianus Capella's didactic allegory *De nuptiis Philologiae et Mercurii*, which included chapters dedicated to each of the seven liberal arts. These two texts sit at the centre of Atkinson's study of the reciprocity between grammar and music theory in the early medieval period, as representative of the Carolingian reception of 'standardized textbooks' on grammar.[34] In particular he demonstrates how such commentaries could bring more explicit explanations about the relation of grammatical accents to sound to bear on Donatus's terse presentation of the three tones: often those expanded explanations depended directly on Martianus Capella and Isidore.[35] Donatus had begun simply naming the tones as three:

> De Tonis. Tonos alii accentus, alii tenores nominant. Toni igitur tres
> sunt, acutus, grauis, circumflexus.[36]

> *Of Tones. Some people name tones 'accents', others 'tenors'. Accordingly the*
> *tones are three, acute, grave and circumflex.*

Three commentaries circulating on the continent, at least two written by Irishmen, and all drawing on a substantial Donatus commentary written between 805 and 830/840 'in an Irish milieu susceptible to continental influence',[37] expand this with passages that are based on Isidore:

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[31] For models of these diagrams, see Figures A10–A16 in Boethius, *Fundamentals of Music*, I.20 (pp. 32–9), and on their transmission, 189–90. These models are based on those found in the earliest manuscripts, including Munich BSB clm 14523, fols. 61v–64r, and BNF lat. 7181, fols. 90v–92r; lat. 7200, fols. 14r–16v; lat. 7201, fols. 20v, 57v–59v; lat. 13908, fols. 66r–68r. Since Boethius was translating Greek sources (namely Nicomachus and Ptolemy), the diagrams are surely based on ancient Greek models, with Greek letters changed into Latin letters. I note here that the 'wing diagram' and its description show that the tone-system was transposed upwards in acoustic space, each series of notes at a progressively higher pitch level.

[32] Duchez, 'La Répresentation', 59; see also her 'Description grammaticale', 567.

[33] *Ibid.*

[34] Atkinson, *The Critical Nexus*, Ch. 2, 'The Reception of Ancient Texts in the Carolingian Era', 49–84, and Ch. 3, 'The Heritage of the Church', 85–145, esp. 52ff.

[35] Atkinson, *The Critical Nexus*, 53ff.

[36] Donatus, *Ars maior* I.5, ed. Holtz, 609.

[37] 'un milieu irlandais réceptif à l'influence continentale': Louis Holtz, 'Murethach et l'influence de la culture irlandaise à Auxerre', in *L'École carolingienne d'Auxerre. De Murethach à Remi 830–908*, ed. Dominique Iogna-Prat, Colette Jeudy and Guy Lobrichon (Paris: Beauchesne, 1991), 47–56, at 52.

Acutus dicitur, eo quod acuat et erigat syllabam; grauis uero, eo quod inclinet et deprimat; circumflexus, eo quod erigat et inclinet. (Murethach)[38]

The acute is so-called because it sharpens and raises the syllable, the grave because it lowers and depresses, the circumflex because it raises and lowers.

dictus uero acutus accentus, quod acuat et erigat syllabam, et ideo erectus et eleuatus dicitur. Gravis . . . eo quod inclinet et deprimat, et ideo depressus uel depositus dicitur. Circumflexus . . . qui constat de acuto et graui; incipiens enim de acuto in grauem desinit, atque dum ascendit et descendit, circumflexus . . . efficitur. (Sedulius Scottus)[39]

the acute accent is so called because it sharpens and raises the syllable and therefore is called 'raised and upright'. The grave . . . is so called because it lowers and depresses, and therefore it is called 'depressed or lowered'. The circumflex . . . consists of an acute and a grave; beginning with the acute, it ends with the grave, and thus as it rises and falls, a circumflex . . . is produced.

accentus uero eleuatio uel depressio uocis [and then as Murethach] (*Ars Laureshamensis*)[40]

accent is the raising or lowering of the voice

Murethach's verbs *acuere* and *erigere* stay close to Isidore; with *inclinere* and *deprimere*, and the *eleuatio* and *depressio* of the voice in the Irish commentary copied at Lorsch, we move closer to spatial concepts of physical height. But it is Sedulius Scottus, by far the most discursive of the three,[41] who goes further: first we find 'erectus et eleuatus' and 'inclinet et deprimat', very much as in the other Irish commentaries, but then in describing the circumflex, we find 'ascendit et descendit', words that directly describe physical rising and falling. He seems to be the first writer to use the verbs *ascendere* and *descendere* to bring together the descriptions of the written accents provided by Donatus with the sound phenomena that they are intended to indicate. In the mid-ninth century,

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[38] *Murethach (Muridac) In Donati artem maiorem*, ed. Louis Holtz, Grammaticae Hibernici Carolini Aevi Pars I, CCCM 40 (1977), 37.

[39] *Sedulius Scottus In Donati artem maiorem*, ed. Bengt Löfstedt, Grammaticae Hibernici Carolini Aevi Pars III/1, CCCM 40B (1977), 40.

[40] *Ars Laureshamensis expositio in Donatem maiorem*, ed. Bengt Löfstedt, Grammaticae Hibernici Carolini Aevi Pars II, CCCM 40A (1977), 177–8.

[41] See Louis Holtz, 'Sur trois commentaires irlandais de l'*art majeur* de Donat au IXᵉ siècle', *Revue d'histoire des textes* 2 (1972), 45–72, at 71.

the spatial metaphor whereby a sound could be 'higher' or 'lower' than another was well understood.

It is not the chronology of the use of the height metaphor that poses the most difficult questions, however: long before, Varro had used *sursum, deorsum* and *altitudo* in describing the significance of accent in relation to the inflection of the voice,[42] while Cicero used *inclinatio* to describe the movement or play of a voice.[43] It is much more an understanding of which aspects of sound these spatially orientated words are describing. It is possible that when Donatus wrote his detailed presentation of the treatment of accents in words of different lengths, the accent in spoken Latin was expressed as inflection of pitch, but historians of the language are essentially in agreement that by the end of the fourth century Latin was being spoken with stress accentuation rather than pitch inflection.[44] According to this view, by the end of the eighth century the quality of pitch inflection had long been absent from the pronunciation of Latin, if indeed it was ever present.[45] References that more obviously relate to intensity of utterance than to inflection of pitch are also present in the Irish Carolingian commentaries. As Murethach explains:

> Toni igitur dicuntur a tonando, id est sonando, eo quod illa syllaba,
> quae accentu regitur, plus sonet in dictione.[46]

> *Accordingly, 'tones' are called from 'thundering', that is 'sounding', because*
> *that syllable which is ruled by an accent sounds more when spoken.*[47]

This association between 'sounding more' and accent can be traced back into the late antique grammatical tradition: Servius, teaching at Rome in the 390s,[48] mentioned the 'exertion to

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[42] See Wallace M. Lindsay, *The Latin Language. An Historical Account of Latin Sounds, Stems, and Flexions* (Oxford: Clarendon Press, 1894), 154; *Grammaticae Romanae Fragmenta*, ed. Funaioli, no. 281.

[43] Cicero, *Brutus. Orator*, trans. George L. Hendrickson and Harry M. Hubbell, Loeb Classical Library 342 (Cambridge, MA: Harvard University Press, 1939), xliii.158: '*non inclinatio vocis*'; *inclinatio* was the word used by Vitruvius to describe the inclination or slope of the earth from the equator to the pole.

[44] Allen, *Vox latina*, 83–4; see also Treitler, 'Reading and Singing', 406, and Atkinson, *Critical Nexus*, 44; this position is maintained by Roger Wright, 'Romance Languages as a Source for Spoken Latin', in *A Companion to the Latin Language*, ed. James Clackson (Oxford: Blackwell, 2011), 59–79, at 70.

[45] Lindsay implies that pitch inflection was never characteristic of spoken Latin: see Lindsay, *The Latin Language*, 151–3: 'But that the Latin language of all periods, at which we have definite knowledge of it, was a language of stress-accentuation, is proved by all the evidence at our disposal, and disproved by nothing except the silence of the grammarians.'

[46] *Murethach (Muridac) In Donati artem maiorem*, ed. Holtz, 37.

[47] See Atkinson, *The Critical Nexus*, 54. It is characteristic of the Carolingian commentaries to incorporate into the glosses on Donatus's text ideas more fully worked out by Isidore, Cassiodorus and Martianus: the idea here of 'sounding more' comes directly from Isidore.

[48] On Servius, see Robert A. Kaster, *Guardians of Language: The Grammarian and Society in Late Antiquity* (Berkeley and Los Angeles: University of California Press, 1988), Ch 5.

which the voice must rise to express the accent'.[49] He was also the first to imply a relation between accent and duration.[50] If these ambiguities about intensity, duration and pitch are considered through the lens of modern linguistic work on prosody, it becomes clear that, in listening to the human voice, differentiation between the acoustic parameters of pitch, intensity and duration is not at all as straightforward as it may have seemed to historians of Latin grammar.[51] In this field we can find direct support for the association of the '*plus sonet in dictione*' description referring to all three prosodic parameters (pitch, intensity, duration): 'increases or changes in pitch and increases in intensity and duration on a given syllable are highly correlated with judgments that that syllable is the most prominent in a word or utterance'.[52] Observing a group of phonetic properties of language that are excluded from alphabetic writing, it is difficult to become physically aware 'of the way in which we produce phonemic distinctions of pitch and accent',[53] and thus more difficult to differentiate between them, except with a raised awareness of their distinction. In our understanding of what the grammarians were talking about, we may need to accept a certain level of ambiguity: rather than arguing that Greek prosody indicated pitch inflection and that in their wholescale adoption of the accents system the Latin grammarians were copying that[54] – even if pitch inflection was for many (or all) a virtual concept, without a parallel experience in reality – it may be better not to try to differentiate between perceptions of intensity, pitch and duration of sounds. Indeed, the ambiguity between pitch and stress is expressly recognized by Lindsay as a possible explanation for the grammarians' incorporation of these ideas about accent into their writing.[55]

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[49] *Grammatici latini*, ed. Heinrich Keil, 8 vols. (Leipzig: Teubner, 1855–80), IV, 426: 'accentus in ea syllaba est, quae plus sonat . . . invenimus enim naturali ratione illam syllabam plus sonare, quae retinet accentum, atque usque eodem nisum vocis ascendere.' A description of the voice as modulated by 'exertion' and 'relaxation' – metaphors derived from the changing of string tension – is found in Quintilian's *Institutio Oratoria* I.10.25: 'Atqui in orando quoque intentio vocis, remissio, flexus pertinet ad movendos audientium adfectus' (And in oratory too, the straining, relaxing or variation of the voice serves to stir the emotions of one's hearers). Quintilian, *The Orator's Education*, ed. and trans. Donald A. Russell, Loeb Classical Library 124–7, 494, 5 vols. (Cambridge, MA: Harvard Univerity Press, 2001); I have not used this translation here.

[50] 'Acutus dicitur accentus, quotiens cursim syllabam proferimus, ut "arma". Circumflexus uero, quotiens tractim, ut "Musa".' *Grammatici latini*, ed. Keil, IV, 426.

[51] On the definition of prosody and the variety of ways in which it has been perceived and studied, see most recently D. Robert Ladd, 'Defining Prosody', in *idem*, *Simultaneous Structure in Phonology* (Oxford University Press, 2014), 57–83.

[52] Anne Cutler and D. Robert Ladd, Introduction to A. Cutler and D. R. Ladd (eds.), *Prosody: Models and Measurements*, Springer Series in Language and Communication 14 (Berlin: Springer, 1983), 1–10, at 4.

[53] Ladd, 'Defining Prosody', 57.

[54] Atkinson, *Critical Nexus*, 44–5.

[55] Lindsay, *The Latin Language*, 152: 'we may then believe the Latin accent to have been in the main an accent of stress, like that of modern Italian, though like it (and the accent of the Romance languages generally), the stress-accent may have been accompanied by a higher tone than the tone of the unstressed syllables'.

9.3 ACCENTS AND MUSICAL SOUND

Even if not worked out in detail, a bond between grammarians' prosodic accents and sounds that could be called 'song' was forged in the writings of the late antique period. The earliest mention of a connection between musical pitch and *accentus* is in Calcidius's commentary on the *Timaeus*:

> accentus quidem existunt ex nimio incitatoque pulsu, succentus uero leni et tardiore, ex accentibus porro et succentibus uariata ratione musicae cantilena symphonia dicitur.[56]

> Accentus *arise from extreme and rapid pulsation*, succentus *from moderate and slower [pulsation]; by means of* accentus *and* succentus, *furthermore, through the varied ratio (proportion) of music, a song is said [to be] harmonious.*

Martianus also traces a relation between *accentus* and *musica*, appearing to conceive of the former as elemental across the whole realm of spoken word and melodic song:

> et est accentus, ut quidam putaverunt, anima vocis et seminarium musices, quod omnis modulatio ex fastigiis vocum gravitatemque componitur[57]

> *as some have thought, accent is the soul of* uox *and the seedbed of music, because every melody is composed of highness and lowness of pitches*[58]

'*Vox*' represents 'the fundamental concept of a musical sound in antiquity'.[59] Most significant in Martianus's statement is the relation of *uox* to the activity of the living: Bower explains 'a tree falling in the forest would not emit a *uox*, even if one were present to hear it'.[60] This is a concept of musical sound 'rooted in [the] animate, human voice',[61] and it is through this that Martianus is able to link the grammatical term *accentus* to composed (as in controlled) melody. And that allows him to explain the etymology of *accentus*:

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[56] Plato, *Timaeus a Calcidio translatus commentarioque instructus*, ed. Jan H. Waszink, Plato Latinus 4 (London, Leiden: Warburg Institute, Brill, 1962), I.44.

[57] Martianus Capella, *De nuptiis Philologiae et Mercurii*, ed. James Willis, BGRT (Leipzig: Teubner, 1983), III. 268–9, at p. 71.

[58] On this passage see Atkinson, *Critical Nexus*, 58; the second part has been translated to reflect a more musical than verbal direction in Martianus's comment.

[59] Bower, '*Sonus, vox*', 52.

[60] *Ibid.*

[61] *Ibid.*

ideoque accentus quasi adcantus dictus est.[62]

> *Thus* accentus *is called* quasi adcantus *['as if in singing'].*[63]

This proposed etymology is shared by Isidore,[64] although it is unclear whether or not Isidore had access to Martianus's *De nuptiis* when composing the *Etymologies*.[65] Never one to leave aside further explanation, Isidore adds:

> Accentus autem dictus, quod iuxta cantum sit, sicut adverbium quia iuxta verbum est.[66]

> *'Accent' is so called because it is joined to song, in the same way that the 'adverb' is so called because it is joined to the verb.*[67]

This way of understanding the relation between *accentus* and *cantus* reappears in the ninth-century Irish commentaries on Donatus with a further clarification:

> Accentus uero dicitur quasi adcantus, eo quod sit iuxta cantum sicut aduerbium iuxta uerbum ... Sed sciendum, quod cantus est in syllaba sonus pronuntiationis, accentus uero eleuatio uel depressio uocis ut 'arma'.[68]

> *Accent is called* 'quasi adcantus' *because it is joined to* cantus *in the same way as* aduerbium *is joined to* uerbum ... *But it must be known that* cantus *is the sound of pronunciation in a syllable, whereas* accentus *is the elevation or depression of the voice, as in* 'arma'.

Thus, they explain, 'accentus' is not a synonym for song, or for melodic sound in and of itself, but a description of a behaviour of sound, as the voice rises or falls; expressed in physical terms (elevation and depression), 'accentus' is the changing sound or movement of the voice.

With such a clarification, we might appear to have arrived right back at our starting point, that is, Donatus's description of tones. But in the intervening period, previously dis-associated strands of thought had become entwined. The signs for this orientation of thought are already present in the way Martianus had drawn 'musica' into his explanation of 'accentus'. Nonetheless, Martianus did not pursue any relation between musical sound

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[62] Martianus Capella, *De nuptiis*, III.268. On the range of meaning of Latin *accentus*, see *LmL*.

[63] For a fuller consideration of 'adcantus' see Atkinson, *Critical Nexus*, 58; on the meaning of 'prosodia' – the 'song on top' – and the etymology 'pros-odia' : 'ad-cantus' : 'accentus', see Ladd, 'Defining Prosody', 58.

[64] Isidore, *Etymologiarum*, ed. Lindsay, I.18.

[65] Mariken Teeuwen, *Harmony and the Music of the Spheres: The Ars musica in Ninth-Century Commentaries on Martianus Capella*, Mittellateinische Studien und Texte 30 (Leiden: Brill, 2002), 25.

[66] Isidore, *Etymologiarum*, I.xviii.

[67] Isidore, *The* Etymologies, trans. Barney *et al.*, 49.

[68] *Murethach (Muridac) In Donati artem maiorem*, ed. Holtz, 37.

and 'accentus' in his technical description of the latter, which is set within his book on grammar (III) and depends squarely on the older antique grammatical tradition. Likewise, he placed the technical explanation of tones within his book on musical harmony (IX):

> Sed nunc de tonis. tonus est spatii magnitudo, qui ideo tonus dictus, quia per hoc spatium ante omnes prima vox quae fuerit extenditur, hoc est de nota qualibet in notam, ut a media in paramesen.[69]

> *But now concerning tones: a tone is a magnitude of [musical] space; and it is called 'tone', because through this space the first pitch that existed before all others is extended; that is, from one certain note to another note, for example, from the* mese *to the* paramese.

As a magnitude, the *tonus* can be measured:

> verum tonus est spatium cum legitima quantitate, qui ex duobus sonis diversis inter se invicem continetur.[70]

> *A tone is an interval of a fixed magnitude that is encompassed between two mutually different sounds.*[71]

Martianus explains that between two different sounds (*duobus sonis diuersis*) there lies a measured interval, which is called a '*tonus*'; he then proceeds to explain the size of different musical intervals. All this is built upon Greek harmonic theory.

Cassiodorus's treatment of this theory was less coherent, drawing a connection between the 'entire harmonic system' (described as '*tonus*' in the sense of mode) and the behaviour of the voice using the word 'accentus':

> Tonus est totius constitutionis armonicae differentia et quantitas, quae in vocis accentu sive tenore consistit.[72]

> *Tonus is a size and difference of the entire harmonic system which consists in the accent or inflection of the voice.*[73]

Cassiodorus has here conflated two ways of using the word 'tonus', one from grammatical thought ('accent or inflection'), the other from music theory ('size and difference of the entire harmonic system').[74] Each depended on Greek writing, and each was evidently

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[69] Martianus Capella, *De nuptiis*, ed. Willis, IX. 960, at 370.

[70] *Ibid.*, IX.930, at 356–7.

[71] See Atkinson, *The Critical Nexus*, 26.

[72] Cassiodorus, *Cassiodori Senatoris Institutiones*, ed. Roger A. B. Mynors (Oxford: Clarendon Press, 1937), II.5.8 (p. 145).

[73] Atkinson, *Critical Nexus*, 39; his translation of 'tenore' as 'inflexion' reflects the meaning of the term as used by Latin grammarians (see n. 20 above).

[74] Atkinson, '*Tonus* in the Carolingian Era', 27.

familiar to antique Latin writers, but they had sat apart previously, belonging in separate intellectual fields. It may well be that it was the confusion of the two traditions of thought that had spurred the Irish Carolingian commentators Murethach and Sedulius Scottus to be so explicit about keeping them apart. But their resistance may have come too late: Cassiodorus's definition of *tonus* using both physical measure and behaviour of the human voice had already become embedded in Carolingian music theory, quoted within a short passage that set out to define the 'eight tones' of music:

> Octo tonos in musica consistere musicus scire debet, per quos omnis modulatio quasi quodam glutino sibi adherere uidetur. Tonus est minima pars musicae regulae. Tamen sicut minima pars grammaticae littera sic minima pars arithmetice unitas. Et quomodo litteris oratio, unitatibus aceruus multiplicatus numerorum surgit et erigitur, eomodo et sonorum tonorumque linea omnis cantilena modulatur. Definitur autem ita: tonus est totius constitutionis armonicae differentia et quantitas, quae in uocis accentu siue tenore consistit.[75]

> *The* musicus *should know that there are eight tones in music, through which every arrangement of pitches, as if by some kind of glue, seems to stick together. The tone is the smallest part of a musical rule, and, just as a letter is the smallest part of grammar, so unity is the smallest part of arithmetic, and as with speech and letters, a multitude of numbers arises and is raised up by the multiplication of unities; in the same manner all* cantilena *is sung by the line of sounds and tones. It is defined in this way: tonus is a size and difference of the entire harmonic system, which consists in the accent or inflection of the voice.*

The passage was attributed to Alcuin of York by Gerbert;[76] later studies have supported its early date, but not necessarily the authorial attribution.[77] Most important in the current

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[75] As transcribed by Hartmut Möller from a manuscript copied before 1206: see 'Zur Frage der musik-geschichtlichen Bedeutung der "academia" am Hofe Karls des Großen: Die *Musica Albini*', in *Akademie und Musik. Erscheinungsweisen und Wirkungen des Akademiegedankens in Kultur- und Musikgeschichte: Institutionen, Veranstaltungen, Schriften. Festschrift für Werner Braun zum 65. Geburtstag*, ed. Wolf Frobenius, Nicole Schwindt-Gross and Thomas Sick, Saarbrücker Studien zur Musikwissenschaft n.s. 7 (Saarbrücken: Saarbrücker Druckerei und Verlag, 1993), 269–88, at 276. The passage was first edited by Martin Gerbert in *Scriptores ecclesiastici de musica sacra potissimum*, 3 vols. (St Blasien: Typis S. Blasiensis, 1784; rep. Hildesheim: Olms, 1963), I, 26–7.

[76] *Scriptores*, ed. Gerbert, I, 26f.

[77] Möller, 'Zur Frage', 276. On the relation of this passage to Aurelian's *Musica disciplina*, see *Aureliani Reomensis Musica disciplina*, ed. Gushee, 40; on ways of dating its creation, see Möller, 'Zur Frage', 274ff; on the text complex to which it relates, see Peter Jeffery, 'The Earliest Oktōēchoi: The Role of Jerusalem and Palestine in the Beginnings of Modal Ordering', in *idem* (ed.), *The Study of Medieval Chant: Paths and Bridges, East and West. In Honor of Kenneth Levy* (Woodbridge: Boydell Press, 2001), 147–209, at 167.

discussion is not the late date of the earliest surviving manuscript witness (twelfth century), but the fact that a version of the passage appears in the mid-ninth-century *Musica disciplina* of Aurelian. Gushee argues that the passage had 'an existence independent from – and earlier than – Aurelian'.

What is of most interest in the consideration of the relation between *accentus* and musical sound here is the extent to which this passage is marked by new thinking: even if dependent on antique thought, this is no simple repeat of older music theory but a new formulation. The analogy made between the smallest parts of grammar, arithmetic and music, although probably dependent on older writers, is framed here in a new way (including arithmetic as well as grammar and music);[78] and the division of music into eight tones, which are then named (as *protus*, authentic and plagal, and so on), is, of course, entirely new in the West, although parallel to the short tonary preserved in BNF lat. 13159, made in 800.[79]

In the second half of the eighth century any educated Frank might have encountered the grammatical theory of accents as he read Donatus's *Ars maior*, Isidore's *Etymologies* or perhaps even Martianus Capella's *De nuptiis*. The first two were certainly widely available, but there is doubt about the circulation of Martianus's story of the marriage of Philology and Mercury; its availability in the eighth century has not been definitively demonstrated.[80] By the end of the ninth century it had become widely studied in Carolingian schools,[81] and had certainly been read by some Carolingians well before that, as the commentaries by Martin of Laon and John Scot Eriugena testify. At least in the works of Donatus and Isidore, a reader could have seen the *notae* indicating accents, and a listener would have heard the descriptions of how the accents were written: 'a line drawn upwards from the left side to the right' for the acute accent, 'a line drawn from the upper left down to the right', for the grave accent and 'a line made of an acute and a grave' for the circumflex.[82] The doctrine that accents represented the 'elevating' or 'depressing' of the voice, that is, inflection or movement in the sound of the voice, and that the sound created in this way could be called 'song' was widely shared. The tradition of study of grammar thus offered a way of representing the sound of a word in writing, not only phonetically, in terms of letters and syllables, but also by using the writing surface to chart the modulating sound of syllables, from sounds which

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[78] On this analogy, see most recently Klaus-Jürgen Sachs, 'Musikalische Elementarlehre im Mittelalter', in Bernhard *et al.* (eds.), *Rezeption des antiken Fachs im Mittelalter*, 105–61, at 109ff; also Nancy C. Phillips, *'Musica' and 'Scolica enchiriadis'. The Literary, Theoretical, and Musical Sources*, unpublished PhD dissertation (University of New York, 1984), 279ff, with further previous bibliography; see also further below, pp. 319–22.

[79] On this manuscript and the tonary it contains, see Michel Huglo, 'Un tonaire du graduel de la fin du VIIIᵉ siècle (Paris B.N. lat 13159)', *RG* 31 (1952), 176–86, 224–33; and Huglo, *Les Tonaires*, 25–29.

[80] See Teeuwen, *Harmony and the Music of the Spheres*, 20–7.

[81] This is the judgement of Mariken Teeuwen, based on her study of the tradition of commentary (see Teeuwen, *Harmony and the Music of the Spheres*, 29, n. 70); Claudio Leonardi suggested an earlier date, by the middle of the ninth century (Leonardi, 'I codici di Marziano Capella I–II', vol. 33, 462–5).

[82] Isidore, *Etymologiarum*, I.18.

could be described as *gravis* to those described as *acutus*, and the reverse, as well as the two combined. Although some grammatical texts draw on information from music theory based on musical instruments, the central object of these grammatical texts was the human speaking voice.

9.4 SPEAKING AND SINGING VOICES

de uoce. uox est aer ictus auditu percipibilis, quantum in ipso est. Graeci qualiter? ἀὴρ πεπληγμένος αἰσθητὸς ἀκοῇ, ὅσον ἐφ᾽ ἑαυτῷ ἐστιν. uocis formae sunt duae, articulata et confusa. articulata est quae audita intellegitur et scribitur et ideo a plerisque explanata, a nonnullis intellegibilis dicitur. hanc Graeci quid appellant? ἔναρθρον φωνήν. huius autem species quot sunt? duae. quae? nam aut musica est, quae tibiis uel tuba redditur aut quolibet organo, aut communis, qua promiscue omnes utuntur. confusa autem est quae nihil aliud quam simplicem uocis sonum emittit, ut est equi hinni-tus, anguis sibilus, plausus, stridor et cetera his similia. alii eam quae dicitur in usu articularis litteralem dixerunt, ut nomina, uerba, aduerbia et ceteras partes orationis. omne autem explanatiuarum uocum initium et indiuidua uox est littera, ex qua articulata uox existit [et] in quam ultimam resoluitur; unde consequens est ut de littera dicamus.[83]

On the voice. Voice is struck air, perceptible in the hearing, so far as it can be. What do the Greeks call it? Struck air, perceptible to the hearing, as much as is in itself. The forms of the voice are two, articulated and confused. Articulated voice is what is understood when it is heard and is written and for that reason called 'intelligible' by many people, and by some it is called 'understandable'. What do the Greeks call it? Articulate speech. How many kinds does it have? Two. Which? Either it is music, which is produced by pipes or trumpet or some sort of organ, or it is general sound, which everybody uses indiscriminately. Confused, however, is what utters nothing other than the simple sound of the voice like the neighing of a horse, the hissing of a snake, applause, a shriek, and other things like this. Others have said that that which is generally called articulate is literal, like nouns, verbs, adverbs, and the other parts of speech. However, the starting point for all articulate voices, and an individual sound [of its own] is the letter, from which the articulate voice emerges [and] into the

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[83] Ms: 'uox existit in que ultimam'. Marius Victorinus, *Ars grammatica*, ed. Italo Mariotti (Florence: Felice Le Monnier, 1967), 2.1–6 (p. 60).

last of which it is resolved. And so it is logical that we [now] talk about the letters.

A collection of grammatical texts made at the monastery of Lorsch circa 800 opens with the *Ars grammatica* of Marius Victorinus, a Roman grammarian and theologian of the fourth century (Figure 30): this sits at the beginning of a group of works on grammar and metre, with examples of verse in the form of riddles and Virgilian centos.[84] Although this codex does not include Donatus's *Ars maior*, it has to be assumed that this was available at Lorsch in another codex;[85] the group of texts in this manuscript is characterized by its concentration on metre. The codex was copied by several scribes, some collaborating in copying individual works: most of these wrote in an 'old Lorsch style' (an early Caroline minuscule of Lorsch type).[86] Victorinus first divides the forms of sound into articulate and confused, and then divides the articulate form into a further two types, comprising the music made by instruments and the sounds made by the 'universal' (the human) voice.[87] Although closely based on Donatus's *Ars maior*, this second division was not found in that earlier text. This opening passage provides a good illustration of how an educated person reading antique texts as they were transmitted to the early Carolingians might have started to think about the physical phenomenon of sound.

Victorinus's clarity in distinguishing between humanly and instrumentally generated sounds is not universally typical, however; indeed, it is only one of several different schemes that set out categories of sound. Donatus's division of voices (i.e., sounds) into articulate and confused, the first capable of being expressed in letters and the second not, was common. Another more refined scheme – picked up by later writers such as Aldhelm and Alcuin – was offered by Priscian.[88] This acknowledged that writability and signification in thought were not synonymous, and therefore separated categories of sound in two intersecting fashions: on the one hand, articulate and inarticulate and, on the other – cutting across the first – writable and not writable. Therefore some inarticulate voices (such as those of animals)

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[84] Vatican Pal. lat. 1753: described in *CLA* Supp., no. 1776.

[85] Although there is no surviving copy of Donatus's *Ars maior* copied at Lorsch, a copy of Paul the Deacon's *Expositio Artis Donati*, copied in a script of the 'Übergangsstil', thus a little later than Vatican Pal. lat. 1753, survives in Vatican Pal. lat. 1746, fols. 27r–40r; on this see Bernhard Bischoff, *Die Abtei Lorsch im Spiegel ihrer Handschriften*, Geschichtsblätter für den Kreis Bergstraße 10 (2nd rev. edn, Lorsch: Heimat- und Kulturverein Lorsch, 1989), 32.

[86] Bischoff, *Lorsch*, 32. He describes the main scripts in this manuscript under the heading 'Der älterer Lorscher Stil'.

[87] On Latin terminology for sound words, and the lack of direct equivalents in modern European languages, see especially Bower, '*Sonus, vox*'.

[88] *Prisciani grammatici Caesariensis institutionum grammaticarum libri XVIII*, ed. Martin Hertz (Leipzig: Teubner, 1855) (= *Grammatici latini*, ed. Heinrich Keil, vol. 2), I.1. On this passage see Françoise Desbordes, *Idées romaines sur l'écriture* (Lille: Presses universitaires, 1990), 106; on animal voices and various sound schemes, see Susan Rankin, 'Capturing Sounds: The Notation of Language', in Lynn Ransom and Emma Dillon (eds.), Cantus Scriptus: *Technologies of Medieval Song* (Piscataway: Gorgias Press, 2012), 11–41.

Figure 30 Vatican, Biblioteca Apostolica Vaticana Pal. lat. 1753, fol. 2r.

could be written in letters, and some articulate voices (i.e., some sounds made by humans) could not be written in letters. Priscian's examples for these categories begin with the articulate and writable first words of the *Aeneid*, '*Arma uirumque cano*', proceeding to '*coax*' (croak) to exemplify a writable but inarticulate voice, with whistling and groaning as articulate, unwritable voices, and rattling or rumbling as inarticulate, unwritable voices. Such schemes for systematizing types of sound came out of traditions of thought that were concerned with language and its expression in writing – only rarely did such schemes touch on sounds classified as music. Even Cassiodorus's bringing together of the technical term *accentus* with 'the entire harmonic system' came in a passage that deals not with grammar but with music.

Victorinus's division between the sound of musical instruments and the sound of the human voice picks up another theme characteristic of Greek music theory rather than grammar. By allowing for a contrast between the speaking voice, 'which everybody uses indiscriminately' and a musically organized 'voice' (which could mean a musical instrument or something produced on a musical instrument),[89] Victorinus shows himself to be aware of an important difference in the behaviour of these voices. The difference that is being referred to – effectively between 'continuous and intervallic' movements of the voice – had been set out at length and with great clarity by Aristoxenus, writing in the fourth century BCE:

> First of all, then, we must discuss the different kinds of movement with respect to place [*topos*], and try to understand what they are. While every voice can move in the manner mentioned, there are two forms of this movement, the continuous and the intervallic. In the continuous form the voice seems to the senses to traverse a space [*topos*] in such a way as never to stand still even at the extremities [of its movement] themselves, at least as far as the impression of the senses is concerned, moving continuously to the point of silence; whereas in the other, which we call intervallic, it seems to move in the opposite way. During its course it brings itself to rest on one pitch and then on another; it does this continuously (I mean continuously with respect to time), passing over the spaces bounded by the pitches, but coming to rest on the pitches themselves and sounding them alone, and is described as 'singing', and as moving in intervallic motion. Each of these descriptions is to be understood with respect to the impression of the senses. Whether it is actually possible or impossible for the voice to move and then to come to rest upon a single pitch is a question belonging to a different enquiry, and for the purposes of the present study an

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[89] Bower, '*Sonus, vox*', esp. 52.

account of the motion involved in each of these is unnecessary . . . It is clear then from what we have said that there are two kinds of movement of the voice with respect to place, and that of these the continuous is that of speech, the intervallic that of melody.[90]

Although this careful and extensive explanation of the difference between the continuous and the discrete movement of sound was never again set out with such clarity, it was transmitted by late antique writers in highly summarized form. The distinction is described succinctly by Boethius in his *De institutione musica*:

> Every voice is either συνεχής which is continuous, or διαστηματική which it is named when it is sustained by means of interval. A voice is continuous when, as in speaking or reciting a prose oration, we hurry over words: the voice hastens not to get caught up in high [*acutis*] and low [*grauibus*] sounds, but to run through the words very quickly, and the impulse of continuous voice is occupied with pronouncing and giving meanings to the words. Διαστηματική, on the other hand, is that voice which we sustain in singing, wherein we submit less to words than to a sequence of intervals forming a tune. This particular voice is more deliberate, and by measuring out differences of pitch it produces a certain interval, not of silence, but of sustained and drawn out song.[91]

Boethius's explanation of the classification of voices designates each of two types of voice by descriptive names. Thus the speaking voice is 'syneches' ('holding together'), while the singing voice is 'diastematike' ('intervallic'), following a sequence of intervals. The singing voice 'measures out differences of pitch' to produce specific intervals ('*et per modulandas varietates quoddam faciens intervallum*'). The speaking and singing voices are therefore characterized by the familiar frameworks for measuring variables of 'continuous' and 'discrete'.

Yet the distinction rendered so explicitly by Aristoxenus and Boethius was not one of which all educated writers were conscious. This is vividly illustrated by a story told by Cicero towards the end of book III of *De oratore*, in a section dealing with performance. With this

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[90] This translation guided by that provided by *Greek Musical Writings II*, ed. Barker, Aristoxenus, *Elementa harmonica* I, at 132.

[91] Boethius, *Fundamentals of Music*, trans. Bower, I.12. 'Omnis vox aut συνεχής [syneches] est, quae continua, aut διαστηματική [diastematike], quae dicitur cum intervallo suspensa. Et continua quidem est, qua loquentes vel prosam orationem legentes verba percurrimus. Festinat enim tunc vox non haerere in acutis et gravibus sonis, sed quam velocissime verba percurrere, expediendisque sensibus exprimendisque sermonibus continuae vocis impetus operatur. Διαστηματική [Diastematike] autem est ea, quam canendo suspendimus, in qua non potius sermonibus sed modulis inservimus, estque vox ipsa tardior et per modulandas varietates quoddam faciens intervallum, non taciturnitatis sed suspensae ac tardae potius cantilenae.' Boethius, *De institutione musica*, ed. Friedlein, I.12 (p. 199).

anecdote, Cicero attempts to convince the reader of the importance of modulation of the voice in delivery:

> When we look at effectiveness and excellence in delivery, the voice undoubtedly plays the most important part . . . In order to preserve the voice nothing is more useful than frequent modulation, while nothing is more harmful than unrestrained, uninterrupted exertion. And, indeed, what is more suitable for our ears and for a pleasing delivery than alternation, variety and change? Actually Gracchus, whom I mentioned earlier, acted accordingly . . . When he was addressing a public meeting, he always had someone standing inconspicuously behind him with a little ivory flute, a skillful man who would sound a quick note that would either rouse him when his voice had dropped, or call him back when he was speaking in a strained voice.
>
> There is . . . a middle range in every voice (though this is different in every individual case). Raising the voice gradually from this level is useful as well as pleasing, since shouting right from the start is a coarse thing to do, and this gradual approach is at the same time salutary, as it will strengthen the voice. Moreover, there is a certain limit to raising the voice (which is still below the level of shouting at the highest pitch). Beyond this the flute will not allow you to go, while it will also call you back when you are actually reaching this limit. Likewise at the other end of the scale, when you are dropping your voice there is also a lowest sound, and this you reach step by step, descending from pitch to pitch. By this variation, and by running through all the pitches, the voice will both preserve itself and make the delivery pleasing. And while you will leave the man with his flute at home, you will bring with you to the forum a feeling for these things, derived from practice.[92]

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[92] This translation from Cicero, *On the Ideal Orator (De Oratore)*, trans. with introduction, James M. May and Jakob Wisse (Oxford University Press, 2001), III.lx–lxi.224–7 (pp. 295–6). 'Ad actionis autem usum atque laudem maximam sine dubio partem vox obtinet . . . Nam ad vocem obtinendam nihil est utilius quam crebra mutatio, nihil perniciosius quam effusa sine intermissione contentio. Quid, ad aures nostras et actionis suavitatem quid est vicissitudine et varietate et commutatione aptius? Itaque idem Gracchus . . . cum eburneola solitus est habere fistula qui staret occulte post ipsum cum concionaretur peritum hominem qui inflaret celeriter eum sonum quo illum aut remissum excitaret aut a contentione revocaret . . . In omni voce . . . est quoddam medium, sed suum cuique voci : hinc gradatim ascendere vocem [utile] et suave est (nam a principio clamare agreste quiddam est) et idem illud ad firmandam est vocem salutare; deinde est quoddam contentionis extremum, quod tamen interius est quam acutissimus clamor, quo te fistula progredi non sinet, et iam ab ipsa contentione revocabit; est item contra quoddam in remissione gravissimum quoque tanquam sonorum gradibus descenditur. Haec uarietas et hic per omnes sonos vocis cursus et se tuebitur et actioni afferet suavitatem. Sed fistulatorem domi relinquetis, sensum huius consuetudinis vobiscum ad forum

Cicero writes in order to help an orator succeed in persuading his audience, hence his concern for variation in the manner of delivery of an oration. He reports that Gracchus used an assistant to stand behind him out of sight, sounding notes on a pipe, whenever it seemed necessary to rouse Gracchus or, indeed, to stimulate him to control of his voice. But the model of sound change that Cicero presents here – whether that be changing pitch or intensity or both – uses a wind instrument, a small ivory pipe; such an instrument would have sounded discrete, stepped, notes, produced by placing fingers on holes spaced along its length. As the voice rises from its mean, or falls below it, the sound of the pipe can be used to correct it, to help the speaker to find his way to a better sound level. Although there is no mention of this pipe playing melodies during the oration, equally, there is no sense of a distinction made between the way a voice sounds and the way a pipe sounds. That non-discriminating attitude is maintained in later Roman rhetorical treatises, including the *Institutio Oratoria* of Quintilian, when he compares the voice to the strings of a musical instrument,[93] and advises the orator to use intermediate sounds, since 'the lower pitch is lacking in force' and 'the higher pitch is in peril of breaking'.[94]

Sitting chronologically between Victorinus and Cassiodorus, Martianus Capella must have been well aware of this contrast between continuous and discrete spectrums of notes, and yet he was prepared to state that 'accent is the soul of utterance and the seedbed of music', expressly bringing together the speaking and the singing voice.

We are thus confronted by confusion wrought by the relation between different traditions of thought: in the Greek tradition of harmonics, musical (melodic) sound is conceptualized as composed of notes set at measured intervals, thus related as discrete sounds, while in Latin writing on grammar and rhetoric a distinction between discrete and continuous sounds is not always made. That absence of distinction between two kinds of voice may depend on a simple lack of knowledge, as seems probable in the cases of Cicero and Quintilian, set into relief by Victorinus's clear division between the two (without explanation, however). In yet other texts, knowledge of that distinction seems to have been held at a distance, depending on the subject at hand: Martianus's direct link between music and the speaking voice belongs within his writing about grammar (book III of the *De nuptiis*), separated by five intermediate books from detailed technical presentation of Greek harmonic systems in book IX of the *De nuptiis*.

There is yet another model of sound that should be cited here, not only because of its extremely wide diffusion but also because it can be set alongside either of the ways of

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deferetis.' Cicero, *Cicero in Twenty-Eight Volumes IV: De Oratore III*, ed. and trans. Harris Rackham, Loeb Classical Library 349 (Cambridge, MA: Harvard University Press, 1968), III.224–7.

[93] Quintilian, *The Orator's Education*, XI.3.42: 'Nam uox ut nerui, quo remissior hoc grauior et plenior, quo tensior hoc tenuis et acuta magis est' ('The voice is indeed like the strings of an instrument: the slacker it is, the deeper and fuller it is, the tighter it is, the thinner and shriller it is').

[94] *Ibid.*: 'Sic ima uim non habet, summa rumpi periclitatur. Mediis ergo utendum sonis' (this translation not from Rackham or Russell).

conceptualizing sound offered by grammarians and Greek music theorists. The basic definition 'Musica est scientia bene modulandi' ('Music is the knowledge of measuring well') became known to generations of medieval theorists through its use by Augustine;[95] yet this was not Augustine's own abstraction but one derived from sources which may go back to Varro, and beyond that, to Greek texts.[96] This form of words was taken up by Cassiodorus,[97] and then Isidore wrote 'musica est peritia modulationis sono cantuque consistens'.[98] That this old definition seemed – to a Carolingian music theorist – to remain relevant is implied by the opening of the late ninth-century *Scolica enchiriadis*:

M : Musica quid est?   D : Bene modulandi scientia.
M : Bene modulari quid est?   D : Melos suavisonum moderari.

Master : What is music?   *Disciple : The knowledge of measuring well.*
Master : What is measuring well?   *Disciple : Setting out sweet-sounding melody.*

It is, of course, a definition of music, and, above all, good music – 'sweet-sounding melody'. Augustine's definition depends on the verb 'modulor': 'to sing or to play in a manner determined according to measure and number' or 'to shape musically'.[99] Early in his treatise Augustine commits an entire chapter (I.2.3) to the explanation of the relation between modulation and movement, arriving in the next passage (I.3.4) at the further definition:

> Musica est scientia bene movendi. Sed quia bene moveri iam dici potest, quidquid numerose servatis temporum atque intervallorum dimensionibus movetur (iam enim delectat, et ob hoc modulatio non incongrue iam vocatur), fieri autem potest, ut ista numerositas atque dimensio delectet.[100]

> *Music is the knowledge of setting things in motion well. But since something can be said 'to be set in motion well', then something is set in motion regulated by number with respect to the dimensions of times and intervals (for since it pleases, because of this it is not inappropriate to call it 'modulatio'), so this can transpire, so that it is this very numerosity and measure that delights.*

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[95] *De Musica libri sex Œuvres de Saint Augustin* 1st series 7: *Dialogues philosophiques* 4, ed. Guy Finaert and F.-J. Thonnard (Paris: Desclée, 1947), I.2.2.

[96] See *ibid.*, n. 5 (p. 485); it can be documented in Censorinus (see *LmL*, entry 'modulor'). It is Mathiesen's view, however, that this definition links Augustine's work with the Roman rhetorical tradition rather than the traditions of Greek music theory: see Thomas Mathiesen, *Apollo's Lyre. Greek Music and Music Theory in Antiquity and the Middle Ages* (Lincoln, NE, and London: University of Nebraska Press, 1999), 620.

[97] *Cassiodori senatoris institutiones*, ed. Mynors, II.v.2.

[98] Isidore, *Etymologiarum*, III.15: 'Music is the skill that stands for measurement through sound and song.'

[99] *LmL.*

[100] Augustine, *De Musica*, I.3.4.

Thus the metaphor of movement, regulated in time and harmonic interval, sat at the heart of Augustine's exposition of musical sound.

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The antique discipline of grammar encompassed not only the structural rules of the Latin language but also its expression in sound: in addition to the alphabetically based principles for writing syllables and words, grammar explained acoustic changes as words are enunciated. Whether those changes be perceived as of pitch or of intensity or duration, they could be written using the simple accent signs. Described in the same terms as Greek prosodic accents, these Latin accents remained a primary element in the grammatical tradition that continued unbroken into the early Middle Ages. Even if rarely found actually written above texts in early medieval manuscripts, these signs were characterized and illustrated in different kinds of texts, which include, besides grammars and commentaries on grammars, Isidore's encyclopedic *Etymologies*.

Etymological explanations by Martianus and Isidore of the word '*accentus*' as '*adcantus*' reveal the awareness of a relation – or some sort of reconciliation – between the language-based discipline of grammar and the mathematical discipline of music. By linking the definitions of 'tone' from each of these disciplines, Cassiodorus rendered that relation even more explicit. In contrast to the passive acceptance of similarity in spoken and musical sound reflected in the writings of Cicero and Quintilian, the writings of Martianus, Cassiodorus and, finally, Isidore reflect an active engagement with the phenomenon of sound and attempt to explain it in technical terms derived from separate traditions of thought.

Beyond Cassiodorus's confrontation of concepts of *tonus* drawn from each discipline, however, the models of sound presented in writings on grammar and writings on music remained separate. Indeed, Boethius's treatment of the relation of spoken and musical sounds is derisory in its very concision – at least in comparison to Aristoxenus's meticulous explanation: one kind of sound is 'continuous', the other 'discrete'. Nevertheless, as Aristoxenus had made clear, both of those types of sound involved movement through 'soundspace'. Indeed, this metaphor of movement for melodic, musical sound expressed in time was deeply embedded in intellectual thought, without needing to be related to distinctions between continuous and discrete types of sounding. The intellectual idea that good music originated in well-regulated movement in sound had certainly been inherited by the Carolingians. This was re-affirmed in theoretical writing about music by at least one late Carolingian scholar.

10

Writing Music: Accents

Even earlier, probably already in the late eighth or early ninth century, Carolingian scribes used this fundamental conceptualization of musical sound as movement in time as the starting point for a new writing practice, the writing (or 'notation' from the Latin *nota*, 'a written mark') of musical sound. The acute and grave accents, represented as simple upward and downward strokes, were widely recognized as ways of fixing acoustic meaning in writing: the upward stroke indicating sound changing through being 'sharpened', 'raised', 'increased'; the downwards stroke indicating sound changing through being 'pressed' or 'pulled down', 'decreased'. As in relation to spoken language, those written graphs indicated movement through soundspace, so also they could indicate musical movement through soundspace, as in Aristoxenus's description of continuous sound that 'traverse[s] a space in such a way as never to stand still even at the extremities themselves'. Read in a different way, these written graphs could indicate movement through soundspace perceived as 'passing over the spaces bounded by the pitches, but coming to rest on the pitches themselves and sounding them alone', as in Aristoxenus's description of intervallic sound. Each of these models of sound became the foundation for a music script: the first the basis of Palaeofrankish script, the second the basis of Frankish script.

10.1 A FIRST MODEL (PALAEOFRANKISH)

Distinguishing between the speaking and the singing voice did not weigh heavily on the minds of those who created the first medieval type of musical script. A model for representing in writing the sound of the voice as it enunciated the syllables of words was accessible, described in the most basic and best known of grammars, that of Donatus, as well as in the widely circulated encyclopedia of knowledge, Isidore's *Etymologies*. The characteristic that these prosodic accents indicated, as the voice moved from one syllable onto another, was sound in flux: whether such changes were or had previously been rationalized as variations of pitch or of emphasis, or of both combined, is quite unclear. They may not have been perceived by the inventors of this early type of music script as qualitatively different from the changes heard in a singing voice, as it enunciated

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successive syllables. These accents could be written in the form of one mark above each syllable, positioned in the space above the words following a pattern of higher pitch/increased emphasis higher up on the writing surface and lower pitch/less emphasis lower down on the writing surface.

This was the first model used in the Carolingian period for writing out musical sounds. The historical relation between the graphs of the grammatical prosodic accents and those used in a particular system of music script was first worked out by Jacques Handschin: reading the mid-ninth-century music theory text by Aurelian of Réôme, he remarked on the relation between Aurelian's description '*accentus acutus*' and the musical phenomenon of two rising notes.[1] He then went on to associate Aurelian's terminology with notation for the Greek *Doxa* in a sacramentary made at St Amand, BNF lat. 2291 (fol. 16r). In relation to musical signs, the most important result of this insight was to contradict the hitherto accepted relation between the neume known as a *uirga* and the grammarians' acute accent. Unfortunately, that contradiction confused him, and led the continuation of his exploration down an unhelpful path: somewhere along the way the old *accentus acutus/uirga* association had got back into the story.[2] Later Corbin pointed out that Aurelian's descriptions did not refer to written marks but to melodic gestures,[3] and in this way weakened the connection Handschin had sought to make between prosodic accents and a music script that was in use at the time Aurelian was writing. Nevertheless, Handschin and (in the same year) Jammers had drawn attention to a system of neumatic music script that had not hitherto been described in print – they named it 'Palaeofrankish'.[4]

The relation between prosodic accents and Palaeofrankish script has been more amply and rigorously demonstrated by Atkinson, who also used Aurelian's descriptions as a starting point. First he went over some of the same ground as Handschin, demonstrating that 'the melodic gestures in the chants Aurelian cites and the terminology he uses to describe them are congruent with the inflections of the voice and their graphic representation under the system of prosodic accents'.[5] Thus it was firmly established that at least one music theorist writing in the mid-ninth century was not only familiar with prosodic accents as a way of clarifying the enunciation of syllables and words but also expected his readers to be able to imagine melodic behaviours through descriptions built around the terminology of accents.

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[1] See above, pp. 265–9.

[2] On this confusion, see esp. Atkinson, *Critical Nexus*, 108.

[3] Corbin, *Die Neumen*, 3.18: 'Wenn Aurelian von Akzent spricht, scheint er nicht an schriftliche Aufzeichnungen zu denken, sondern allein an den Fortgang der Stimmen.' On this see also Treitler, 'Reading and Singing', 381.

[4] On the process of naming this script, see above, pp. 40–1.

[5] Atkinson, *Critical Nexus*, 106.

Yet doubts remained as to whether Aurelian himself knew of a music script that 'corresponded to the prosodic accents'.[6] The earliest manuscript transmitting Aurelian's *Musica disciplina* (Valenciennes BM 148, copied in the mid- to late ninth century) includes several notations in Palaeofrankish script,[7] and these, together with the short passage for the *Doxa* in BNF lat. 2291, were enough to satisfy Handschin on the subject. A more circumspect position was adopted by Treitler, who clearly considered Aurelian to be cognizant with *a* music script (as written in Valenciennes 148), which he referred to as 'Aurelian's neumes', and then allowed that these neumes shared significant characteristics with 'Palaeofrankish notation, as it has been identified in the literature'.[8] The chain of analogies stretching from prosodic accents through Aurelian's description of melodic movement to written marks for music and then a system of music script had not yet been solidly demonstrated. Atkinson's reaction to this was to frame his questions about the use of a script based on prosodic accents in a way that took the matter beyond the narrow situation of one treatise and one practical example, each in one manuscript only: he simply asked whether a script corresponding to the prosodic accents was 'in broader use in the ninth century' – in his answer, he included, besides the two sources known to Handschin, the Essen sacramentary identified by Jammers (Düsseldorf Universitätsbibliothek D1).[9] Two chants added in the margins of this book before 900, and then a substantial repertory of mass chants written out in the early tenth century, are all notated in Palaeofrankish neumes.[10] Atkinson was able to show that the neume forms in these notations, as well as those in BNF lat. 2291, corresponded to the melodic gestures represented by Aurelian's accent terminology.

10.1.1 A New Hypothesis

As written marks signifying the modulation of sound, the prosodic accent signs provided a model for building musical scripts: yet the importance of the link between graphs and the meaning attributed to them by grammarians has not been fully appreciated by music

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[6] Atkinson, *Critical Nexus*, 106.

[7] On fols. 71v (two entries), 72r (two entries), and 84r; the entry on fol. 84v is written in the same colour of ink as the text, and by a pen of the same width, and may thus have been written by the text scribe. The entries on fols. 71v and 72r are all written using a thinner nib and in a darker brown ink. The dating of this manuscript is peculiarly difficult, estimated by some in the middle of the ninth century and by others (including *BK* III, no. 6344) in the last quarter.

[8] Treitler, 'Reading and Singing', 378. The scholar most convinced of Aurelian's knowledge of neumes was Kenneth Levy, whose 'Aurelian uses neumes when he wants to' left no room for doubt (*Gregorian Chant*, 194), but he reached this conclusion through arguments neither based on the transmission of the *Musica disciplina*, nor on the relation between Aurelian's text and Palaeofrankish notations.

[9] Jammers, *Die Essener Neumenhandschriften*.

[10] The chants on fols. 185v and 186r were dated in the late ninth century by Bernhard Bischoff, 'Die liturgische Musik und das Bildungswesen im frühmittelalterlichen Essen', *Annalen des historischen Vereins für den Niederrhein* 157 (1955), 191–4, at 192; on the other notations in this manuscript, see Chernyakova, *Palaeofrankish Musical Notation*.

palaeographers. Confrontation of the basic Palaeofrankish signs with descriptions of accents indicate that it is possible to take a small but significant step beyond previous examinations of Palaeofrankish script. In examples of Palaeofrankish script, the graph corresponding to an acute accent – an upward stroke – has been considered to represent a musical gesture written in other neumatic scripts with signs that indicate two ascending notes, while the graph corresponding to a grave accent – a downward stroke – represents a musical gesture written in other neumatic scripts in signs that indicate two descending notes. Modern guides to neumatic scripts simply set the Palaeofrankish signs beside groups of two notes, ascending or descending, but reading these signs through the lens of later notations may have seriously misled us. In order to grasp the problem, we need to return to the way in which prosodic accents were understood by grammarians. This is how the ninth-century Irish grammarian Murethach described them: 'the acute accent is so called because it elevates and lifts up a syllable; the grave is so called because it depresses and moves it downward; the circumflex is so called because it both elevates and moves it downward'.[11] This description, in common with all the older statements of the same kind, refers to the modulation of sound – the accent 'elevates', 'lifts up', or 'depresses', 'moves it downward', that is, the accent does not mark positions of departure and arrival – but the *fact* of change and movement of the enunciated syllable through a soundspace. If this grammatical perception was the starting point for those who worked out a writing system that could represent the sound of words as they were sung, it is also possible that the idea of representing the *modulation* of sound (rather than individual notes that defined a melodic pattern) on the writing surface was the basis of that act of scribal creativity. The basic neume forms of the Palaeofrankish script, the upward and downward strokes, and combinations of them may not have been intended, in the first place, as marks to represent the behaviour or relation of individual notes, *or* as marks that indicated movement between individual notes: they may have shown change, the movement of sound, pure and simple.

In fact, the basis of Palaeofrankish neumes in the movement of sound has been hinted at more than once, most prominently by Handschin, Waeltner and Treitler. Handschin's observation was the most oblique: 'incidentally one could ask, whether the grammarians did not already sometimes think of the "acutus [accent]" as a rise rather than a high note'.[12] This was said in passing, and the idea could not be further envisaged or explored while he upheld his own strong conviction that Palaeofrankish script – at least as it was written in BNF lat. 2291 – was a 'Tonortschrift' (consisting of lines that joined positions representing different notes on the written surface[13]). Very shortly after, Waeltner evoked the idea of movement again: 'Contrary to the general assumption, these terms should not be viewed as names for neumes. Rather the terms employed by Aurelian describe directly the movement of the voice

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[11] See above, p. 286; this translation from Atkinson, *Critical Nexus*, 58.

[12] 'man könnte übrigens fragen, ob nicht schon die Grammatiker beim "acutus" manchmal an Aufstieg statt an Hochton gedacht haben'. Handschin, 'Eine alte Neumenschrift', 79.

[13] Or, more elegantly, 'links between positions on a diastematic matrix': Atkinson, *Critical Nexus*, 110.

in chant.'[14] Waeltner evidently recognized in the prosodic accents, and in Aurelian's descriptions based on them, references to movement, but since he was doubtful about the link between Aurelian's descriptions and a music script, the insight was not brought to bear on written marks. Finally, although Treitler confined his remarks to Aurelian's descriptions of notation, without discussion of particular examples, his view was absolutely clear: 'Aurelian's notation . . . depicts the movement of the voice, syllable by syllable', and 'It is movement and sometimes tessitura, but not pitch, that is at the centre of [Aurelian's] melody concept, and that is represented by his notation.'[15] The only step Treitler did not take towards reaching the conclusion that Palaeofrankish neumes represented movement was to join up his thoughts about how Aurelian described melody with examples of Palaeofrankish script beyond those in the Valenciennes treatise.

It may seem odd then that the idea that these graphs represented musical movement – analogous to prosodic accents as signs of the movement of the speaking voice – was not understood as providing a direct explanation for the fundamental concept in Palaeofrankish script of how sound should be written. There seem to have been three major obstacles, of which the first was Handschin's *Tonortschrift* characterization. Were this script system to consist of forms that linked positions higher or lower on the written surface, then its primary determining feature would have been individual notes, specific pitches, not movement between them. Handschin can hardly be castigated for such an approach, since the rest of the history of Western music notation has been based on the notion of individual, fixed, non-identical notes, without even mentioning the Greek harmonic theory that had dominated the previous period. But his *Tonortschrift* hypothesis has been satisfactorily disproven, in the simplest of fashions: Atkinson pointed to the fact that neumes representing different intervals were not written in different sizes or lengths, and was able to demonstrate that there was no attempt of any kind to write neumes of different sizes. If the notations were semi-diastematic, as Handschin certainly supposed, then the shapes of the neumes would have had to be varied in order to accomplish their task of 'linking positions on a diastematic matrix'.[16] Once that conceptualization of Palaeofrankish script as seeking diastematic precision is removed, we can return to a characterization proposed by Treitler for Aurelian's notation: 'discrimination of pitch patterns'.[17]

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[14] 'Entgegen der allgemeine Annahme sind diese Termini nicht als Namen für Neumen anzusehen. Die von Aurelian verwendeten Termini beschreiben vielmehr unmittelbar die Bewegung der Stimme im Gesang': Ernst Ludwig Waeltner, 'Die "Musica disciplina" des Aurelianus Reomensis', in Gerald Abraham *et al.* (ed.), *Internationale Musikwissenschaftliche Gesellschaft. Bericht über den siebenten Internationalen Musikwissenschaftlichen Kongress Köln 1958* (Kassel: Bärenreiter, 1959), 293–5, at 294. Translation from Atkinson, *Critical Nexus*, 105.

[15] Treitler, 'Reading and Singing', 380; Palaeofrankish neumes are reproduced in the course of his discussion of neumes incorporated into the earliest manuscript of Aurelian's *Musica disciplina* (378).

[16] See Ch. 7 n. 13.

[17] Treitler, 'Reading and Singing', 380.

A second obstacle is presented by the accent signs themselves: as graphic signs they are very simple, and little was required of them; in grammar, they indicated a changing sound, an audible event within a word, but they were written over, not between, syllables. There was thus a certain disconnection between their positioning and the behaviour of the voice, since the change – the movement from one level of pitch/intensity to another – did not take place entirely within the enunciation of an individual syllable. Beyond this, accents did not convey information about the relation between one word and the next, only between syllables within words. Once employed as signs for more elaborate melodic sounds, those limitations might become more challenging. Yet, the issue of placement seems not to have posed a problem: as described by the grammarians, the accents indicated rising and falling of the voice, and they could therefore be used in this more detached way, showing longer patterns of rising and falling within the enunciation of an individual syllable. As for the relation between individual words, indeed between parts of extended melodic passages for individual syllables, these could be handled according to the height metaphor: neumes could be written at different heights above the text, distinguishing between more levels of pitch or intensity than simply 'high' and 'low'.

10.1.2 From Accents to a Music Script

The greatest obstacle to a hypothesis that envisages Palaeofrankish neumes as graphs of movement lies in understanding the process of development from early experiments to the notations we see in extant manuscripts. All these extant notations include signs that mark out individual notes and use other graphic techniques that are not associated with prosodic accents. When the voice did not move in enunciating a syllable, then a sign representing stasis had to be written – and this took the form of the simplest mark, a point (or short horizontal dash). Yet the writing out of individual notes is taken much further than that in extant early examples (as set out in examples below). If, as has been well recognized in other neumatic scripts, these ways of handling neumes differentiate between shorter and longer (or less and more emphasized) delivery of pitch patterns and different articulations of pitch patterns, then we are looking at the incorporation in the written record of ways of shaping melodies in performance; in other words, a level of detail well beyond the record of a melodic pattern composed of rising and falling patterns. Such a care for modes of articulation may or may not belong to the first phase of writing in this script, even if the basis for handling neumes in these ways was there from the start; indeed, such elaborate detail may only have been systematically worked out once the script was put to extended practical use for melismatic chant, whether Gregorian or some other kind of singing. It is worth remembering that, as an orally transmitted melodic repertory, Gregorian chant would have been passed on from one cantor to another with all the skills and finesse in performance habitually executed by the teacher. Any way of writing sound that became the vehicle for a repertory as artfully fashioned as the Gregorian had to be able to respond to elaborate, cultivated ways of

singing, and it is this step that is likely to have inspired the refinement of graphic details, as well as the invention of signs for special kinds of delivery (liquescence, *quilisma*).

Nevertheless, in exploring the early development of the script and the notational system built from it, we should not assume any relation to Gregorian (or other kind of) chant, and that allows us to leave aside the complexities of melismatic chant and to imagine a scribe writing out simple melodic passages. Yet even this exercise leads quickly to the perception that a scribe who started from prosodic accents and attempted to write out a sung passage would very soon have encountered the need to differentiate in most of those ways named above: while the phenomenon of quickly repeated notes on one pitch level might not have occurred in a simple melody, different speeds or intensities of delivery of similar melodic gestures are likely to have been characteristic of any kind of singing, as are movements of the voice through larger and smaller intervals. Any melodic way of singing a text is highly likely to have combined movement on individual syllables and stasis on individual syllables. What that means is that the phenomenon of single notes, written as points and/or short dashes, would have sat alongside the three accent signs from the beginning of developing such a script. An example of a relatively simple melody – for the Communion *Iustorum anime* – can be seen in the Wolfenbüttel fragments (Figure 31, ll.14–16). In the first phrase (up to *sunt*), only one syllable has more than one note;[18] even after this more elaborate passages remain relatively limited, although *tormentum* and *malitie* at the end of the next phrase would have required more attention. To use an example written down perhaps a hundred years after this script was invented may not be convincing in a consideration of how the system was conceived at an early stage, and for this reason I shall not press this example on the subject of articulation. Yet this melody surely illustrates a task typical for an early notator, whether he was writing down a non-liturgical song or a simple liturgical chant.

The way in which Aurelian describes how to sing the psalm tone for the first mode,[19] using language generated from accents (and immediately recognizable to a reader of Donatus), is also relevant here, since it suggests a way of thinking about musical gestures that can be dated at least as early as the mid-ninth century.[20] In the following passage I have divided up Aurelian's instructions for singing each of the sixteen syllables one by one:[21]

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[18] When compared to the notations for this communion in Chartres 47 and Laon 239, the melody notated in the Wolfenbüttel fragment is relatively dissimilar, at least as far as '*et non tanget illos*'; from '*tormentum*' on it is much more similar.

[19] *Aureliani Reomensis Musica disciplina*, ed. Gushee, Ch. XVIIII.

[20] For a discussion of this passage, see Atkinson, *Critical Nexus*, 104.

[21] The text given here is based on the published edition, but altered to reflect presentation in the manuscript Valenciennes 148 (fol. 83r), where the psalm verse syllables are written in red capitals.
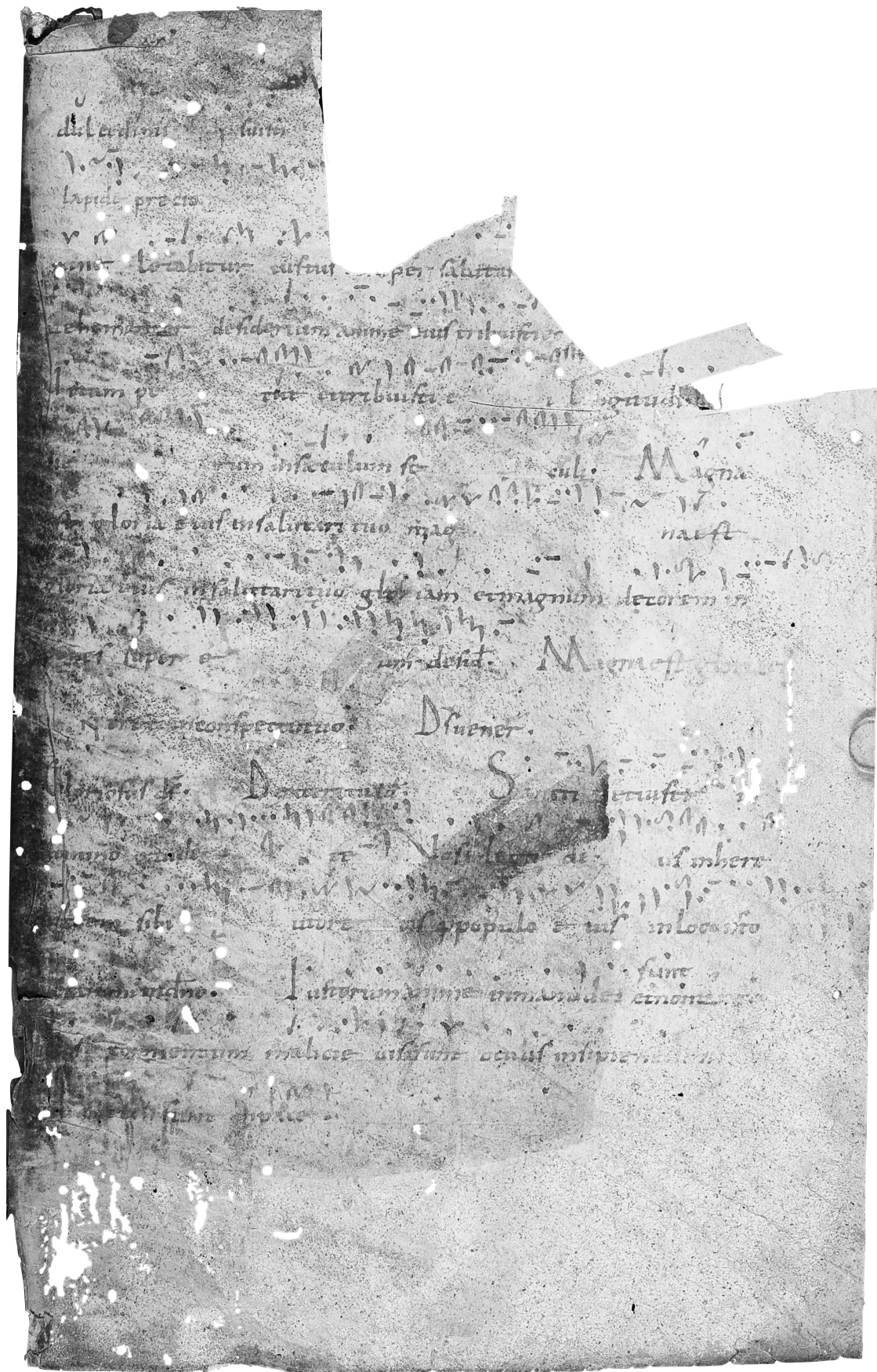
Figure 31 Wolfenbüttel, Herzog August Bibliothek Cod. Guelf. 476 Helmst., back endleaf recto.

Igitur in reciprocatione introituum, si uersus eiusdem XVI in se con-
tinuerit syllabas, ut est 'Gloria patri et filio et spiritui sancto',

Therefore in the alternating pattern of Introits,[22] if a verse of the same has
16 syllables, as in 'Gloria patri et filio et spiritui sancto'

1 Mediocriter prima initiabitur syllaba, id est GLO

the first syllable, that is, GLO, will begin moderately [i.e. at a moderate pitch]

2 et secunda acuto enunciabitur accentu, uidelicet RI. Ea tamen ratione, si dactilus fuerit,
uel quelibet correpta syllaba; sin autem producta fuerit, tunc circumflexione gaudebit.

and the second, that is, RI, will be enunciated with an acute accent, for this reason, if it is
a dactyl or any 'short' syllable; but if it is 'long', it will rejoice in a circumflex.

3 Tercia uero, scilicet A, suspensa tenebitur uoce.

The third, that is, A, will be held with a suspended voice [i.e. on the same pitch]

4 Quarta post haec, hoc est PA, si producta fuerit ueluti haec eadem syllaba quae
positione producitur, in ea acutus accendetur uocis accentus.

After this the fourth, that is, PA, if it is 'long' like this very syllable which is lengthened by
position, in this an acute accent of the voice will be aroused.

5–7 Quinta autem, sexta ac septima, uidelicet he TRI et FI, graui tenebuntur tenore.

However, the fifth, sixth and seventh, that is, 'TRI ET FI', will be held on a low pitch.[23]

8 Octava uero, hoc est LI circumflectetur.

The eighth, that is, LI, will be circumflexed.[24]

9 Nona acuetur, id est O.

The ninth, that is, O, will be made acute.

10–11 Decima et undecima, scilicet he ET SPI grauiter pronunciabuntur

The tenth and the eleventh, that is, ET SPI, will be pronounced grave

12 [ac] duodecima, hoc est RI circumuoluetur.[25]

and the twelfth, that is, RI, will be turned around [circumflexed].

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[22] Aurelian refers here to the alternation of antiphon and verse in the mass Introit: a typical early medieval performance would follow the pattern antiphon, psalm verse, antiphon, second psalm verse [if required], antiphon, doxology, antiphon.

[23] The sense of 'tenor' here is not that of the grammarians, but probably of a pitch that is held: see Hoffmann-Axthelm, 'Tenor', I.5.

[24] On Aurelian's use of *circumflexio* and *circumvolutio*, see Atkinson, *Critical Nexus*, 103 n. 55.

[25] Ms: 'has duodecima'.

13–14   Tercia autem decima atque quartadecima, id est TU et I in imis deponentur.

The thirteenth and fourteenth, that is, TU and I, will be set down in the depths.

15   Quintadecima uero, uidelicet SANC terna gratulabitur uocis percussione.

The fifteenth, that is, SANC, will receive a threefold percussion of the voice.

16   Sane sextadecima syllaba, scilicet TO siue prima fuerit, secundaue seu tertia diuisio iuxta normam superius insitam eorum erit distributio diuisionum; sin alias uberior fuerit uersus, interpolatio ilico fiet modulationis iuxta congeriem litterarum ut hic:

The 16th syllable, if it is first, second or third division, the distribution of divisions will be according to their inherent norm above;[26] *but if the verse is richer, there will be an interpolation of melody according to the accumulation of letters as here:*

Gloria patri et filio et spiritui sancto;
sicut erat in principio et nunc et semper et in secula seculorum amen.[27]

Glory be to the Father and to the Son and to the Holy Spirit;
as it was in the beginning ever shall be, for ever and ever, amen.

Where there is change of sound, Aurelian identifies it by using the accent names as metaphors for musical behaviour: the second syllable 'will be enunciated with an acute accent'; on the fourth syllable 'an acute accent of the voice will be aroused'; the eighth syllable 'will be circumflexed'; the ninth 'will be made acute'; and so on. He also describes moments when there is no movement away from the previous sound: for the third syllable he states that it 'will be held with a suspended voice'; for the fifth, sixth and seventh syllables, the voice 'will be held on a grave course'. In the melodic course being described, there is a mixture of movement and of stasis (on individual syllables), but Aurelian's fundamental concept is of melody as movement: that explains why he uses descriptions such as 'suspended' and 'held' when he needs to point to a lack of movement, and why, on syllables where there is a change of sound, the accents provide verbs that name that change in an active way. Thus, explaining the point as an element in this mindset is hardly difficult, since the phenomenon of an unmodulated, static sound must have been familiar to all, including the grammarians: it had to exist from the moment of inventing the script.

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[26] Aurelian is referring here to the system of varying the end of a psalm tone to accord with the beginning of an antiphon melody: these 'divisions' are the endings corresponding to groups of melodies, otherwise known as '*differentiae*'.

[27] Although the presence of graphic signs corresponding to the descriptions provided may be implied here, Valenciennes 148 provides none at this stage; for a reconstruction see Atkinson, *Critical Nexus*, 104, where the accent signs that correspond to Aurelian's descriptions are set under a psalm tone written on staves (from the *Graduale Romanum*).

10.1.3 Palaeofrankish Music Script: Extant Examples

While Palaeofrankish music script was probably designed using signs to indicate movement – corresponding to Aristoxenus's characterization of continuous sound – by the middle of the ninth century, at least by the time at which the earliest extant examples were written, those who read it may no longer have understood the script in those terms, but as representing movement in defined intervals, Boethius's 'diastematic' voices.

Besides the *Doxa* in BNF lat. 2291 and the two chants in Düsseldorf D1 written and notated in the ninth century, there are least two other fragments containing Gregorian chants notated in Palaeofrankish neumes that can be dated to the ninth or the early tenth century. Half of a folio from an office antiphoner has chants for the office of St Denis, including one notated responsory (*Post passionem domini*);[28] this was written in the third quarter of the ninth century, and may now be the earliest surviving example of a Palaeofrankish notation.[29] Fragments of a bifolium from a gradual written shortly after 900 now in Wolfenbüttel extend the corpus of examples of Gregorian chants notated in Palaeofrankish neumes to a significant extent. Beyond this, several other examples of Palaeofrankish neumatic notation may well have been written in the ninth century.[30] This was a way of writing musical sounds that can be seen written in both West and East Frankish regions by 900 at the latest: support for the argument that it had been designed considerably earlier depends on the hypothesis that this system was first intended to show movement.

These various examples of musical notations now classified as 'Palaeofrankish' all share a way of writing musical sounds that uses the three prosodic accents as the basis of a more extensive system. In addition to the three accents, the simple point or short dash is used to signify static sounds. Beyond these basic elements, the system of script is built up through the formation of other signs by combining the principal forms in different ways. In addition to the various neumes, there are other ways in which the system is worked out. In the responsory *Post passionem domini* in Vienna 612 and the Greek *Doxa* in BNF lat. 2291, it is possible to identify two further graphic techniques beyond the neume forms that indicate melodic direction. In both cases, melodic direction remains the basis for the neumes, but extra information has been built into the written record through modification, rather than replacement, of those neumes.

One of these non-melodic techniques involves the formulation and control of note grouping through the graphic continuity or separation of strokes. For example, in Vienna 612 two different ways of writing an identical melodic pattern (movement up,

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[28] Responsory for the night office on the feast of St Denis.
[29] Vienna 612, from an office antiphoner: see Bischoff, *Schreibschulen*, II, 8, where he dates the fragment in the third quarter of the ninth century; see also *BK* III, 7143.
[30] See pp. 94–98 above.

Example 63 Two signs for low–high–low in Vienna, ÖNB 612.

Example 64 Neumes in Wolfenbüttel HAB 476 back endleaf verso, l.13.

scribe
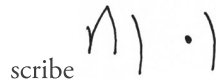
Example 65 Neumes for low–high and high–low in BNF lat. 2291.

movement down) are visible, written immediately beside each other. First, a movement of rising and then falling is written as a separate point followed by a falling stroke; next, the same melodic pattern is written in one stroke, as an arch (following the model of the circumflex accent, Example 63). That same contrast of separated and continuous strokes is also found in the Wolfenbüttel fragments, for example, in the verse *Lingua mea* for the Offertory *Constitues eos* (Example 64). The manner in which this strategy is most often evident in these notations is in two ways of writing simple upward and downward movements: a melodic gesture representing movement up or down could be written as one stroke (following the accent signs) or as separate points. Both ways of writing each of these movements can be seen in BNF lat. 2291 (Example 65).[31] In the Wolfenbüttel fragment the same differentiation can be found, and here also as an element in longer note groups. For the two successive syllables *letabitur* and *iustus* in the Offertory *In uirtute tua* the melody moves up, up again, then down (and then the two patterns over each of the syllables diverge). On the first occasion the beginning of the group is written as a stroke, but on the second occasion as two points (Example 66). Study of other, later, notations that use this technique of joining and separating groups of notes demonstrates that it indicates some kind of articulation: there is no reason not to consider that as the purpose here as well. This strategy of joining and separating is found across all the early examples of Palaeofrankish notation: it is at least possible that the technique belongs to the earliest phases of this script.

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[31] For the last of the four examples from BNF lat. 2291 – two falling points – there is no example in the entry where the two points are written as an independent group for one syllable: they are only found within longer groups of signs.

Example 66 Neumes in Wolfenbüttel HAB 476 back endleaf recto, l.3.

Example 67 Neumes in BNF lat. 2291.
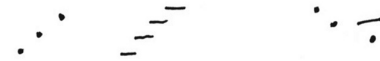
Example 68 Neumes in Wolfenbüttel HAB 476 back endleaf verso, l.5.

Et   por -   te
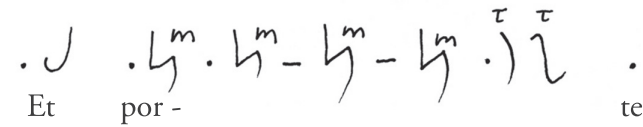
Example 69 Neumes in Valenciennes Bibliothèque municipale 150, fol. 36r.
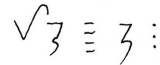
A second non-melodic technique involves the treatment of forms for individual notes within melismatic groups: in BNF lat. 2291 groups of notes can be written as simple points or as horizontal dashes, or as combinations of these two forms (Example 67). In all these examples, the individual elements in each group indicate individual notes, while the form of each mark surely provides non-melodic information. The Vienna 612 fragment is too damaged for it to be possible to see whether such differentiation was present there also. That differentiation between a point and a short dash is also a basic characteristic of notations in the Wolfenbüttel fragments: in the passage shown in Example 68 (from the Tract *Tu es Petrus*), considerable care has been taken to control the passage of the melody, using both points and dashes between longer, joined neume forms. Control of the articulation of individual parts of the melody has also been recorded using significative letters (m 'mediocriter' and t 'tenere'). Differentiation between signs for falling patterns written as points, or as dashes, or continuous forms, can be seen in an untexted entry in the margin of fol. 36r of Valenciennes 150 (Example 69). The entry is quite undatable, but could have been made at any time after the main text, a copy of Gregory of Nazianzus made in the court circle in the first quarter of the ninth century.[32]

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[32] *BK* III, no. 6345.

Example 70 The opening of the Gradual *Adiuuabit*
(Wolfenbüttel HAB 476 front endleaf recto, Chartres 47 fol.
12r, Laon 239 fol. 14v, GT 526).

A-diu-ua-   bit
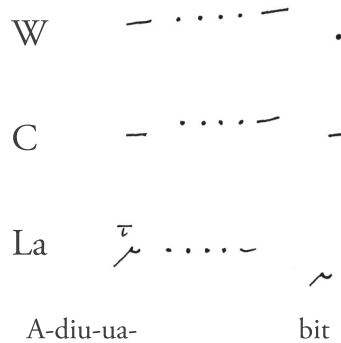
The meaning of this differentiation between points, strokes and continuous forms cannot easily be reconstructed: if considered in terms of one particular sign, consisting of a series of points followed by a short dash all written on one horizontal level, there is a direct correlation between the Wolfenbüttel forms and those in Chartres 47 and Laon 239 (Example 70). Since such concluding strokes often match an added *episema* in Sankt Gallen notations, it might be thought that they signified lengthening, but the matching is not consistent. Cardine notes that when such groups are written at the end of the passage for a single syllable, Chartres 47 and Laon 239 *always* have a longer element at the end, 'in order to allow for the full articulation of the syllable, before going on to the next'.[33]

Given the relation between the grammatical prosodic accents and the basic signs for melodic movement in these examples of Palaeofrankish script, it is important to observe here that there is no obvious relation between other *notae* set out by Donatus, such as those which mark long and short syllables (a long line from left to right and a short, curved stroke respectively) and these musical signs.[34] At a fundamental level, these further *notae* could not be incorporated in the form described by Donatus: they referred to a different quality of sound from the prosodic accents and were never written together with them or in any combined form.

Notations in the Wolfenbüttel fragments and the later notations in Düsseldorf D1 also include a special sign for the *quilisma* (written similarly in the two sources), liquescent versions of the melodic signs and significative letters. Without further evidence it is not possible to guess whether a sign for the *quilisma* musical behaviour (whatever that was) had been invented during an early phase of the use of Palaeofrankish script or was copied from another, different kind of script at a later date.

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[33] Cardine, 'Sémiologie grégorienne', 62: 'Il est également des groupes de strophicus dont le dernier en fin de neume est épisémé pour permettre l'articulation complète de la syllabe, avant de passer à la syllabe suivante.'

[34] Donatus, *Ars maior* I.1, ed. Holtz, 610–11; see also Atkinson, *Critical Nexus*, 41–2.

The combined evidence of these various early sources is enough to argue that what we are dealing with here is a system for writing musical sounds, that is, not just forms conceptualized and then used over and over again by individual scribes on the basis of the three prosodic accents, but a way of writing signs that had been designed – and surely many times changed, refined and stylized before these extant examples were written – in order to write musical melody on parchment. Within that system of writing were embedded not only a set of neume forms but also an idea as to how those forms should be placed in the space between the text lines.

In an important sense then, it is not enough to say that Palaeofrankish script took prosodic accent signs as its basis, for, from the outset, a musical notation would have had to record combinations of movement and stasis. It must have been with a combination of accent signs and signs for staying put that this experiment was begun. Once the possibility of writing a single sound as a point or short dash had been taken on board, many other notational possibilities would have become apparent. A simple example is the description in Aurelian's first-mode psalm-tone explanation of a 'threefold percussion of the voice' (for the fifteenth syllable),[35] a way of singing probably notated with three points (or short dashes) in a row: that would have been the basis for the neumes later named '*strophae*'. A more general application would have been the control of articulation, by choosing which parts of a passage for an individual syllable would be written in continuous strokes and where strokes would be separated. The joining and separation of strokes, as a way of indicating different modes of articulation, could have emerged at a relatively early stage in the history of neumatic scripts, but it is simply impossible to tell from the extant examples when that strategy began to be applied.

To understand the development of neumatic scripts and systems from an early stage of invention up to the notations visible in extant examples forces us to take into account the likelihood of cumulative scribal experimentation, refinement and stylization, and, in addition, the possible influence of other, later systems of neumatic script on those Palaeofrankish notations that remain extant, all of which were written after other scripts had been designed. Unfortunately, recovery of those individual phases of scribal innovation is now entirely beyond our reach. Even if we cannot easily re-imagine the exact nature of the earliest Palaeofrankish script, certain fundamental qualities that are entirely stable in the existing ninth- and early tenth-century examples are unlikely to have been altered. In this sense then, the notations for *Post passionem* and the Greek *Doxa* – both probably written in the third quarter of the ninth century – may stand as representative of a system of music writing that may have been created many decades before. I will return to the question of dating the earliest experiments.

10.2 A SECOND MODEL (FRANKISH)

Scripts of the Frankish notation family use graphs and techniques that differ fundamentally from the Palaeofrankish: the most important include (a) the use of a stroke slanted up to the

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[35] Atkinson, *Critical Nexus*, 103.

right – like the acute accent sign – to indicate a single musical note rather than two (*uirga*); (b) the development of the script on the basis of a pair of referential signs (the *punctum* and the *uirga*, indicating low and high when placed together); and (c) the treatment of lines of neumes in the space over the text. These are written out for individual syllables in continuous diagonal strings, without attempting to chart movement up or down between individual neumes. The work of indicating pitch change was here encoded into sign forms, thus shown symbolically, rather than through the more iconic technique of movement up and down in the space above the text.

Nevertheless, I have argued that none of the various ninth-century music scripts were invented independently: too many basic graphic ideas are shared for this to be demonstrable. There are several aspects that suggest a direct relationship between the Palaeofrankish and Frankish scripts. The most evident of these are the composition of the sign repertory of both scripts from short lines, dots, curves and forms involved in quick changes of direction, and the way in which those forms are written singly or in groups in the space above the text, matched to text syllables. However clear and evident a way forwards this might now seem, nothing like the European neumatic scripts was invented anywhere else: this was a particular way of writing.

Which of these two linked but distinct scripts came first? The earliest example of a Frankish notation, the record of *Psalle modulamina* by a scribe named Engyldeo, may date from as early as the 820s, while no Palaeofrankish example can be dated before the middle of the century. Yet the answer to which came first is unavoidable: it must have been the Palaeofrankish, since the design of the Frankish script is so clearly a reaction to it, a rejection of the Palaeofrankish procedures derived from the sound of speech (continuous sound) in favour of procedures that allowed those with musical training to encapsulate in writing what they sang in a more controlled fashion. Given the subsequent development of musical theory, it would not have been possible to invent the Palaeofrankish script after the Frankish (at least with knowledge of the Frankish), since that would have involved moving away from rather than towards newly won ideas about the substance of music. The crucial change of meaning between the two script systems involved fixing the acute accent graph as a defining or limiting sign: it signified arrival at a note rather than movement through soundspace. If this graph written by grammarians and evidently widely familiar had previously indicated alteration of pitch and/or intensity, what could motivate such a fundamental change of meaning? Why was this new sign, later named '*uirga*', invented?

The answers to these questions provide insights into one of the most interesting developments in the history of musical script in the Carolingian period, since the new *uirga* sign is a clear signal of a fresh perception of how written signs could represent musical sound. In the existing Palaeofrankish script a simple stroke signified the raising or lowering of the voice – depending on whether it was written slanting up or down to the right. Such strokes were emphatically not drawn to signify the singing one after the other

of two separate notes; rather, they signified movement of the voice upwards or downwards. It is an accident of history that, because later notations specified two notes as equivalences to the Palaeofrankish accent signs, we have learnt to think of these strokes as written to represent two notes: there is little evidence that that is how the inventors of Palaeofrankish script first conceived them. In the new approach associated with the *uirga*, and the concomitant changes to other basic signs, neumes did not indicate movement of the voice, following the doctrine of prosodic accents, but individual notes and groups of notes. The reflection in writing of modulation of sound was now abandoned.

10.2.1 Writing Individual Notes

This was an enormous revision. As argued above, the Palaeofrankish approach to writing musical sound must, from the beginning, have combined signs indicating movement of the voice with other signs indicating static sound, since syllables could be sung to unmoving sounds; those moments when a sound was not inflected in any way were written as simple points or dashes. To write anything more musically complicated, scribes used a way of writing sound derived from prosodic accents: a sign more elaborate than a point or dash signified moments or longer passages of inflection in which the voice had to be modulated. Movement of the voice across a range of sounds was charted using the space above the text: sounds could not only be higher, but more high, and highest, lower and lowest. Indeed, the generalized way in which interlinear space was used signals as clearly as does the use of prosodic accents the *lack* of a concept of discrete pitches, of the kind described in Greek harmonic theory. This way of reading Palaeofrankish script is entirely consistent with the approach taken by Aurelian in describing music: Atkinson remarks on the absence from Aurelian's text of 'such staples . . . of late Antiquity as the instrumental nomenclature of ancient Greek harmonic theory, the elegant proofs that a tone cannot be divided into two equal parts, the tone-systems consisting of discrete, mathematically defined points on a pitch continuum'.[36] In Palaeofrankish notations there was a careful mapping out of direction of movement, which it was easy to mistake – as Handschin did – for a diastematic treatment, but this script would never, and could never, have become diastematic.

In the new, younger music scripts, none of the written signs reflected movement itself: that quality was simply removed from the visual image. The one written form in which the line as movement survived was in diagrams in theoretical texts, in which syllables were often joined by lines – as in the earliest extant copy of the *Musica enchiriadis*, a treatise composed in the last third of the ninth century somewhere in northern France (Figure 32),[37] but clearly

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[36] Atkinson, *Critical Nexus*, 114.

[37] The diagram is from Valenciennes BM 337, a copy made at some time in the tenth century.

Similiter enim intrib; principalibus sonis tā L. arch & deut F uox orga

nalis rite sub tetrardo respondere nequit. sed mora meodē agit dum insub

sectando eī rutum responsum noninuenit;

Et ut adliquidū dinosci ualeat quantū indiatessaron simphonia prefatoꝝ

duaꝝ sonoꝝ inconsonantia dominetur. statuam aliquid quadrifaria

transpositione canere. utappareat quomodo indiuersis transpositionibus

diuerso quidem modo sednon diuersa lege uox uoce committet. Sit ergo hęc prima

descriptio. quę etsupra digesta est asono A incipiens etineundē finiens

ubisimul cum uoce principali organalis uox consequatur.

			tris sempiternus	ef		
		pa			fi	
	Tu		tris sempiternus	ef	lu	
		pa			fi lu	us
	Tu					
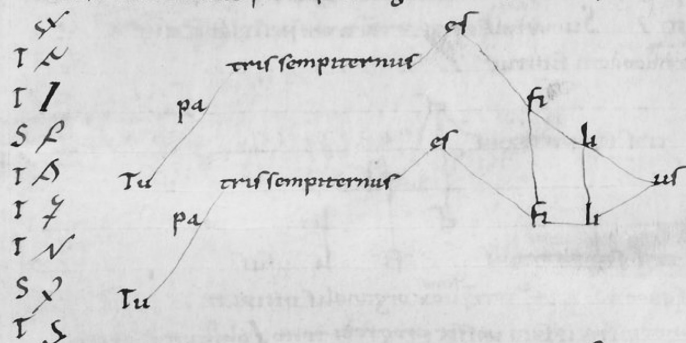
Siccanendo senties quomodo ꝗ obstante deuteri F tritiq: I sonꝝ

absonia. consonanꝝ regione subquarta imponat uocis organalis leuatio

sedrursū eadē absonia inpediente. tetrardū sonū ꝗ transit positio;

Sumamꝰ et transpositionem secundam. quę al incipit etineundom finit.

			tris sempiternus	ef		
		pa			fi	
	Tu		tris sempiternus	ef	lu	us
		pa			fi	
					lu	
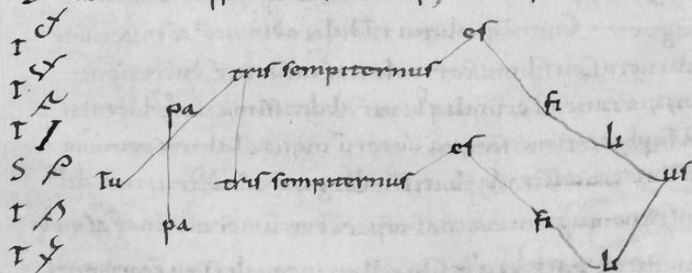
Figure 32 Valenciennes, Bibliothèque municipale 337, fol. 53r.

depending on thought formulated several decades earlier.[38] Of course, the voice would move as it sang, but what were now defined by written graphs were individual notes, not movement between them. This care for indicating both the fact and the number of separate notes to be sung as the voice moved through melodic delivery of a specific text reveals the influence of a new kind of thinking on those who were now responsible for recording musical sounds in writing. A conception of musical sound that privileges discrete tones by breaking melody down in this way is now very familiar: it comes from the science of harmonics, as handed on to Latin antiquity and the European Middle Ages from Greek music theory. The absorption into Carolingian music theory of the idea of separate musical sounds, each with its own identity, but related to each other in measured ways, becomes apparent in the *Musica enchiriadis*. Here music is conceived of as made up of individual *phthongi* or *soni*:

> Sicut vocis articulatae elementariae atque individuae partes sunt litterae, ex quibus compositae syllabae rursus componunt verba et nomina eaque perfectae orationis textum, sic canorae vocis ptongi, qui Latine dicuntur soni, origines sunt et totius musicae continentia in eorum ultimam resolutionem desinit.[39]

> *Just as the basic and discrete parts of spoken expression are letters, from which syllables, then verbs and nouns, are brought together, and [then] the fabric of a complete discourse, so the* ptongi, *which are called* soni *in Latin, are the primary sources of sung expression, and the substance of all music is delimited by their ultimate resolution.*

> Ex sonorum copulatione diastemata, porro ex diastematibus concrescunt systemata; soni vero prima sunt fundamenta cantus. Ptongi autem non quicumque dicuntur soni, sed qui legitimis ab invicem spaciis melo sunt apti.

> *Intervals grow together through the bringing together of sounds, and systems grow together from intervals. Pitches [soni] are the fundamental bases of chant, yet not just any pitches whatsoever are called* ptongi, *but [only] those which are suitable to melody by virtue of their mutual relation through regulated spaces.*

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[38] For this dating of the *enchiriadis* text I thank Calvin Bower; it is also his contention that the content of the *enchiriadis* theory, above all 'the system of tetrachords built on the four qualities *protus, deuterus, tritus, tetrardus*, is considerably older, probably dating back to around 800'; personal communication 28.12.15.

[39] *Musica et scolica enchiriadis una cum aliquibus tractatulis adiunctis*, ed. Hans Schmid, VMK 3 (1981), Ch. 1.

> At singuli horum quattuor sic sunt competenti inter se diversitate dissimiles, ut non solum acumine differant et gravitate, sed in ipso acumine et gravitate propriam naturalitatis suae habeant qualitatem, quam rursus his singulis ratum ab invicem acuminis et laxionis spacium format.

> *And each of these four [ptongi] are dissimilar through the contrast pending between them, such that they not only differ by virtue of their highness and lowness, but in that very highness and lowness they [each] have a quality of their own through their natural state, which again the established spacing of their mutual highness and lowness creates.*

For the writer of the *Musica enchiriadis*, as speech is built up from letters, syllables and syntactically defined words, music is primarily conceptualized as built up from individual notes, the 'primary sources' of all music; these notes are related to each other by regulated intervals; when brought together in musical expression a system (of 'tones') is created. Like letters, these individual notes ('tones') are all different from one another, rendered dissimilar by their respective positions within a system organized by fixed intervals. Seen from such a perspective, other qualities of musical sound – duration, intensity, movement, articulation – must constitute ways of delivering these fundamental elements.

Such a revision would take musical scripts away from a grammarian's idea about how to write sound, derived from a model invented for the speaking voice: even though the *Musica enchiradis* explanation is self-evidently also derived from grammar, this way of describing the basic elements of music is built as an analogy to language, not deriving the qualities from language itself. The analogy is effective in separating musical sound from the speaking voice: musical sound is to be considered not as an extension of the sound of the speaking voice, but as something distinct, with its own qualities. The *Musica enchiriadis* thus marks the assimilation in Carolingian music theory of the older Greek harmonic principles (whether from a Byzantine or a Latin source), which defined separate notes within a spectrum of sounds and which considered musical sound as articulated in discrete rather than continuous steps.

Notwithstanding the late date of the *Musica enchiriadis*, it is hardly necessary to wait for the end of the ninth century to establish knowledge of the difference between continuous and discrete spectrums of sound and of measured tone-systems in Carolingian musical circles. We can take a first step backwards by reviewing the transmission of Boethius's *De institutione musica* and of the ninth book of Martianus Capella's *De nuptiis*. Evidence for transmission of the latter is disputed: Leonardi considered it to have been available already in the eighth century, but, as Mariken Teeuwen argues, this is hard to maintain in the face of the evidence of extant manuscripts.[40] The earliest complete extant Carolingian manuscript

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[40] Leonardi, 'I codici di Marziano Capella', first part; Teeuwen, *Harmony and the Music of the Spheres*, 27ff and 60–150; also *eadem*, 'Martianus Capella's *De nuptiis*: A Pagan "Storehouse" First Discovered by the Irish?', in *Foundations of Learning: The Transfer of Encyclopaedic Knowledge in the Early Middle Ages*, ed. Rolf H. Bremmer Jr. and Kees Dekker (Paris, Leuven, Dudley, MA: Peeters, 2007), 51–62.

witnesses date from the second quarter of the ninth century,[41] with many others copied in the mid-century or third quarter;[42] the reign of Charles the Bald may be regarded as the peak of copying and glossing activity,[43] the earliest manuscripts already laid out to receive glosses,[44] with the region bounded by Corbie, Laon, Reims and Auxerre as the centre from which the text was distributed more widely.[45]

Extant manuscript evidence places reception of Boethius's *De institutione musica* in the Carolingian north more securely, and by the early decades of the ninth century:[46] signs for this come in several forms. Several copies dating from the middle of the century have survived,[47] and there is at least one probably written at St Amand that may date from as early as the first quarter of the century (BNF lat. 7201).[48] In his *Liber officialis*, written soon after 823, Amalarius quoted two passages with the citation '*sicut Boethius in suo libro scribit*'.[49] A reference to '*libri quinque Boetii de musica arte*' appears in a list of books made by or on the orders of Reginbert, librarian of Reichenau:[50] that list was probably compiled between 835 and 842, but many of the books listed had been copied before that period. The evidence of the glossing tradition, itself only now traceable in later ninth-century manuscripts, helps to support an early ninth-century date: Bower argues that specific aspects of the textual transmission of the glosses indicate that they

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[41] Karlsruhe Badische Landesbibliothek Aug. perg. 73 (*BK* I, 1609); Leiden Bibliotheek der Rijksuniversiteit Voss. lat. F 48 (*BK* II, 2191); Vatican Reg. lat. 1987 (*BK* III, 6803); also, with extracts, BNF lat. 13026 (*BK* III, 4864, dating from the first quarter of the century) and BNF nal. 1615 (*BK* III, 5102).

[42] Bamberg Staatsbibliothek Class. 39 (*BK* I, 211); Besançon BM 594 (*BK* I, 629); Leiden Bibliotheek der Rijksuniversiteit BPL 88 (*BK* II, 2146); Oxford Bodleian Laud. lat. 118 (*BK* II, 3821); BNF lat. 7200 (*BK* III, 4430); BNF lat. 8670 (*BK* III, 4554); Vatican Reg. lat. 1535 (*BK* III, 6782); Vatican Vat. lat. 645 (*BK* III, 6847); Wolfenbüttel Gud. lat. 132 (*BK* III, 7317).

[43] Teeuwen, *Harmony and the Music of the Spheres*, 32.

[44] See Teeuwen, 'Martianus Capella's *De Nuptiis*', 59.

[45] Teeuwen, *Harmony and the Music of the Spheres*, 31.

[46] Information about the early manuscripts can be compiled using a series of lists, augmented by information in Bischoff's *Katalog*; the lists are in Calvin M. Bower, 'Boethius' "De institutione musica": A Handlist of Manuscripts', *Scriptorium* 42 (1988), 205–51; Boethius, *Fundamentals*, xl–xliii; and *Glossa maior in institutionem musicam Boethii*, ed. Michael Bernhard and Calvin M. Bower, 4 vols., VMK 9–12 (1993–2011), IV, 1–63.

[47] BNF lat. 7200 (*BK* III, 4430); lat. 14080 (*BK* III, 4953), both mid-ninth century; for the third quarter Munich BSB clm 14523 (*BK* II, 3228), BNF lat. 7181 (*BK* III, 4424), lat. 13020 (*BK* III, 4858), lat. 13955 (*BK* III, 4948), and still others copied in the later ninth century.

[48] See *BK* III, 4431, where the date '1.(/2.) Viertel' is proposed.

[49] *Amalarii episcopi opera liturgica omnia II*, ed. Ioannes Michael Hanssens, Studi e testi 139 (Vatican: BAV, 1948), 296–7; the passages can be found in Boethius, *De institutione musica*, ed. Friedlein, I.1 (at pp. 183–4). On the date of the *Liber officialis*, see *Amalarii episcopi opera liturgica omnia I*, ed. Hanssens, 68.

[50] *Mittelalterliche Bibliothekskataloge Deutschlands und der Schweiz* 1, ed. Paul Lehmann (Munich: Bayerische Akademie der Wissenschaften, 1918), 258. On this and further references in library catalogues and letters, see Michael Bernhard, 'Überlieferung und Fortleben der antiken lateinischen Musiktheorie im Mittelalter', in *Rezeption des antiken Fachs im Mittelalter*, 7–103, at 24ff; also Michael Bernhard, 'Glosses on Boethius' *De institutione musica*', in André Barbera (ed.), *Music Theory and its Sources: Antiquity and the Middle Ages* (Notre Dame, IN: University of Notre Dame Press, 1990), 136–49.

must go back to the last years of Charlemagne's reign.[51] Finally a passage about the Greek string names, attributed (correctly) to Boethius, circulated in association with Cassiodorus's *Institutiones* in manuscripts copied in the first half of the ninth century.[52] In what way this and other textual material added to the *Institutiones* can be connected to Cassiodorus himself is unclear: Cassiodorus and Boethius had been in contact by letter,[53] but Cassiodorus makes no other mention of Boethius's writings on music. The earliest extant evidence of these texts is in the manuscript Bern Burgerbibliothek 212, copied in the first third of the ninth century.[54]

As in the case of Martianus Capella's *De nuptiis*, the earliest manuscript witnesses of Boethius's *De institutione musica* were also copied in north-eastern Francia, at St Amand, Corbie and in the Laon-Soissons area; the text as well as elements of the *glossa maior* were already at Freising in the third quarter of the century. This cumulative evidence argues strongly for the availability of Boethius's *De institutione musica* to some already in the first quarter of the century, and possibly before the death of Charlemagne in 814. By the middle decades of the century the text was more widely diffused.

Contact with the texts that followed the Greek harmonics tradition would have allowed Carolingian scholars to conceptualize melodies in terms of individual notes set at measured intervals; those individual notes could be abstracted in the form of scales. Once understood in that way, the element of musical delivery of a text that consisted of a melodic pattern could be broken down into distinct parts.

Yet it is not even necessary to trace the reception of this ancient learning in the Carolingian period to explain a turning point in the understanding of music by Carolingian scholars: for all that was necessary to support a different attitude towards the notation of musical sounds was already present in the modal theory derived from Byzantine liturgical practice and developed for the ecclesiastical chant sung in the Carolingian empire – Roman-Frankish (or Gregorian) chant.[55] In a mode, individual notes sit at measured intervals from one another: it is the characteristic of each mode to set out notes in different series of intervals – beginning tone, semitone, tone (*protus* or first mode), or semitone, tone, tone (*deuterus* or second mode), or tone, tone, semitone (*tritus* and *tetrardus*, third and

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[51] Calvin M. Bower, 'Die Wechselwirkung von *Philosophia, Mathematica* und *Musica* in der karolingischen Rezeption der "Institutio Musica" von Boethius', in Frank Hentschel (ed.), *Musik – und die Geschichte der Philosophie und Naturwissenschaften im Mittelalter* (Leiden: Brill, 1998), 163–83, at 168. See also *Glossa maior in institutionem musicam Boethii* I, xvi ff (on the transmission of the glosses), and IV, 1–66 (for a full treatment of the manuscript sources of the glosses).

[52] Bernhard, 'Glosses', 141.

[53] See the long letter on music in *Cassiodori Senatoris Variae*, ed. Theodore Mommsen, MGH A XII (Berlin: Weidmann, 1894), II.40 (pp. 70–2), addressed by King Theodoric to Boethius.

[54] *BK* I, 553.

[55] For a general account of the relation to Greek practice, see David E. Cohen, 'Notes, Scales, and Modes in the Earlier Middle Ages', in Thomas Christensen (ed.), *The Cambridge History of Western Music Theory* (Cambridge University Press, 2002), 307–63, at 308ff; and Atkinson, *Critical Nexus*, Ch. 3.

fourth modes). Even if Aurelian had no sense of the harmonics tradition of writing, or even of an abstract clarification of modes as scales, he did have a very good sense of the modes as the basis of a classification system for Gregorian melodies. That classification system depended on recognition of melodies as assembled from groups of notes, those groups representing different segments of a tone-system distinguishable through their different handling of intervals between individual notes. Thus, with the idea of individualized notes within named series in place, singers will have had a strong awareness of melody not as motion – the primary idea since Augustine – but as a succession of separate notes, each with its own identity. That way of thinking about melody can certainly be traced back to 800, the date by which a short tonary had been copied at the back of a psalter.[56] In other words, the late ninth-century date of the *Musica enchiriadis* treatise, and Aurelian's lack of sense of harmonics when writing in the mid-ninth century, should not influence too heavily our assessment of the possible date of changeover from a script that began with modulation of sound as its basis to scripts that recorded individual notes: this way of rationalizing musical sound was certainly known in certain circles from as early as 800, and must then have been further assimilated through contact with Boethius's writings in the period immediately following.

10.2.2 Frankish Music Script

Like the Palaeofrankish script, the new Frankish script was written in short pen strokes over the individual syllables of a text and depended largely on recall of a melodic pattern in order to be read. Within those parameters, the designer of this script must have set aside the Palaeofrankish model and started *ab initio*. His new script was more or less designed around the acute accent graph but gave to this an entirely transformed meaning: it was now used to indicate not movement but one note. Indeed, the critical step taken by this designer was to devise a script in which the relational contrast of two signs, the accent and the point, became the basis for the whole system: when juxtaposed, these indicated a higher and a lower note, and when combined they allowed the construction of further signs (see Example 71). A sign for two rising notes ('*pes*') has a short dash for the first, lower note, followed by an upward stroke for a higher note; this could be read as a point *or* a dash joined to an upward stroke, a *punctum* followed by a *uirga*. The sign for two falling notes ('*clivis*') has an upward stroke signalling a higher note as its first element and then a falling stroke attached to this for the second note, as if the upward stroke were joined to a point written below (a *uirga* followed by a *punctum*). The sign for three notes high–low–high ('*porrectus*') is an extension of this two-note sign, with an upward stroke added to the end (so *uirga, punctum, uirga*). The only sign which does not easily succumb to this kind of analysis is the three-note low–high–low sign (*torculus*), which is not obviously written as an extension of the two rising notes sign, since it

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[56] BNF lat. 13159, fol. 167r–v; see p. 293.

Example 71 Four new Frankish signs (from Graz UB 748 endleaves).

often continues in an arch rather than turning at an angle; nevertheless, it can easily be read as a *punctum* joined to a *clivis*.

Besides the transformed acute accent sign and the repertory of neumes developed from it, the Frankish script differs from the Palaeofrankish in one other prominent fashion: the way in which signs are placed in the space above the text. Where Palaeofrankish neumes were moved up and down, charting melodic direction, the usual practice in writing Frankish script was not to use the space in this relative way, but to place signs immediately above syllables and to allow melismatic passages to rise in strings from this level. This had the advantage of visually associating the beginning of a melodic passage directly with the syllable to which it belonged; yet this procedure may represent an initial, pragmatic response to the demand to write musical notation into books not prepared for it, and in which syllables were not separated to leave horizontal space. In such a situation, a scribe would have been forced to write out neumes in diagonal strings. Support for this hypothesis cannot be discovered in notations written in the first half of the ninth century, since, other than the Engyldeo inscription and Visigothic *versus* notated in Lyon, they no longer exist (and neither of these cases requires the spacing out of text syllables). Nonetheless, there are plenty of later cases where the necessity of writing neumes in upward strings that move diagonally rather than along the page is evident. Such an example is in a fragment from a missal made at Bobbio in the second half of the century (Figure 33), where the words written out for the Gradual *Si ambulem* hardly leave spaces for the melismatic passages over *mala, domine, tua* and *tuus*.

It is important that we realize, in the midst of such speculations, that the Frankish reaction to Palaeofrankish practice was not a step 'backwards', as it might be interpreted when seen from the point of view of modern notations – even of notations written in the eleventh century. Using modern terminology, the Frankish system of script could be said to have replaced the 'semi-diastematy' of Palaeofrankish script with a 'non-diastematic' approach. But the mistake in describing the two approaches in this way is to think in terms of diastematy at all: since neither system attempted to represent intervals, using diastematy to define them is plainly teleological and inappropriate. Once that misconception is removed it is possible to understand the Frankish approach to placement of neumes as entirely consistent with other aspects of the script, above all, the insistence on representing melody as a series of individual notes, in separate or joined graphs. Whether knowledge and understanding of musical substance was gained in a form rationalized in words (through contact with the basics of Greek harmonic theory transmitted by Boethius's text) or in the directly musical experience of modal melody, a singer familiar with the idea of melody as created
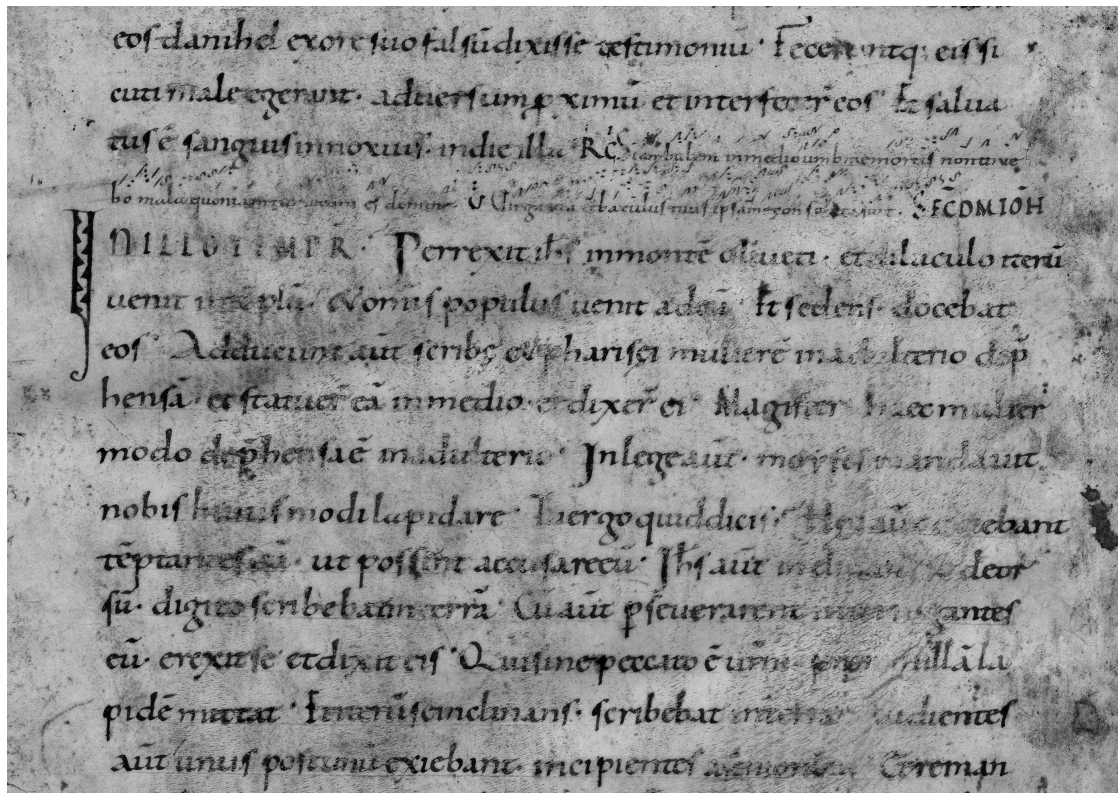
Figure 33 Vatican, Biblioteca Apostolica Vaticana Vat. lat. 5775, fol. 156v.

from individual notes set at discrete intervals would have appreciated that neither script system recorded such information. Indeed, in neither script system was there any hint of intervallic precision: the various techniques for providing pitch information – from the point/upward stroke contrast of the Frankish script, through the movement up and down of Palaeofrankish neumes, to the system of *litterae significativae* that could be added to both – only ever deal with melodic direction, never with 'take note, this is a semitone' or other such intervallic information. Neither notation could be properly read without foreknowledge of the intervallic structure of the notated melody. In the Frankish script, the rough charting characteristic of the Palaeofrankish script was simply abandoned, replaced by the point/stroke contrast and the recognition that a trained reader knew the correct melodic direction at any given point, as well as the intervallic steps. As the change from grammarian's accents showing movement through a soundspace to marks recording defined note series speaks for a progressive step, so, in parallel, the abandonment of rough heighting of neumes speaks for the adoption of music script – perhaps even the claiming of the practice of recording music in writing – by that more specialized group, those who already knew and could sing the correct intervals.

10.3 MANY MUSIC SCRIPTS

Some of the next steps in what can be discovered about the history of neumatic scripts are clear and can be defined; others must be supposed but their precise nature can only be guessed at. We are still dealing with an early stage in the history of music writing, when practices must have remained extensively fluid, before the tendency to consolidate and fix produced regionally identifiable, stable systems. There are so few extant early notations that it is impossible to have much certainty about when and where the first experiments were made, and thus in what kind of social context – whether that be within a narrow group attached to the Carolingian court, among cantors based in one region, or among cantors based in distant regional centres but maintaining contact. Yet, once a way of writing musical sounds *had* been created and seen by cantors and scribes (however few or many), new inventions at both systematic and detailed levels could surely come fast and furious, and from different directions: once the idea of music script had taken shape, a variety of people could react to the first attempts and – subject to their differing perceptions of what should be written and how that could be done – shape new ways of writing *and* use music writing for different purposes. The evidence of the various different surviving types of music script supports the proposition that new script systems drew on a common fund of practices at an early stage. The fact of a multiplicity of different scripts, developed within a period of probably not more than fifty years (and possibly rather less), all with different graphic designs, but largely aiming at the same objectives, is very much in line with Carolingian attitudes to writing in general. An openness to exploration of what could be achieved using writing, the provision of good educational resources (which would include training in writing and writing materials) and a considerable interest in using writing to support Christian worship must all have stimulated this rapid development of individualized, distinctive music scripts.

By 900, there were at least five different music scripts: besides the Palaeofrankish, a way of writing that was practised in both West and East Francia, and in northern Italy ('Frankish'), with an important offshoot in the Iberian peninsula ('Old Hispanic'), a script which was later associated with Brittany and northern Italy and hence now named 'Breton', a script written mainly in Lotharingia ('Lotharingian'), and a script specifically associated with the abbey of Nonantola.[57] To make a list in this way privileges graphic difference over regional diffusion: Frankish script was more widely used than any of the others, while at the other end of the spectrum, the Nonantolan script may only have been written at the abbey itself and later perhaps at Verona.[58] The 'Breton' script may not have been invented in Brittany, even if that was the part of Europe where it was most often used in later centuries. Indeed, the number of surviving sources made close to the creation and early development of these

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[57] From this list I omit the 'Aquitanian' script written mainly in south-west France, since it has not been possible to demonstrate its use definitively during the ninth century.

[58] See Varelli, *Musical Notation*.

scripts is so low that attempts to link types with individual institutions or even regions will generally fail. Approached the other way around, through manuscripts made in individual institutions, it is certainly possible to isolate characteristics of the work in individual scriptoria – as for the Nonantolan script, or for the version of Frankish script written at Sankt Gallen – but attempts to work backwards from these may not lead to other named centres.

Nevertheless, it was possible in the preceding part of this study to follow relationships between these various scripts and to establish that all are directly related to each other: those relationships function in different ways and on different levels of conception and basic graphic design. The differences between the scripts were determined by the different levels and manners of development of potentials embodied in the fundamental ideas and graphs that underlie all these scripts. In this earliest period of the use of musical notation, each individual scribe is likely to have had considerable leeway to develop neume forms and ways of laying them out; he/she could introduce new forms and signs, new kinds of graphic detail and new ways of using old signs. Once the writing of music became more common – more widespread and more recognized as a scribal technique that *should* be used to support musical practice – ways of writing music became regularized through repeated use and conventionalized through wide diffusion. This transition from the disciplined freedom of the work of individual scribes to more established and less flexible procedures may have been effected in different places at different times – but it is widely visible in the regional scripts copied in manuscripts from the late ninth century on. In this sense, the Nonantolan script may be considered as an isolated example of what might earlier have underlain the larger script families: a way of writing music that had absorbed some very general and basic ideas about how to do it, but was being carried out with new graphic designs and ideas about how music should be written. In the case of the Nonantolan script, the idea of writing below the text, when the melodic direction demanded it, is unique. Only the Nonantolan script was not taken up elsewhere, its potential was not developed by others and no family of regional scripts was created.

Besides relationships traceable through the sharing of ideas about how to record specific musical behaviours, the sharing of what might be called 'strategies' that could be transferred easily from one script to another is also a significant factor in the development of scripts. Such strategies need not involve the transfer of specific neume forms, only specific techniques, or even just the idea of providing a category of information: the best example is the addition of *litterae significativae*, a technique for clarifying momentary detail (whether that be to do with pitch levels, duration, intensity, articulation or tone quality).[59] These were not embedded in or directly associated with a specific script and could very easily be transferred

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[59] The importance of being able to think about scripts in ways that recognized parallelisms rather than direct relationships (using words such as 'strategies') was proposed by Arlt in his 'Anschaulichkeit und analytischer Charakter'.

Example 72 Four basic signs in Palaeofrankish, Breton and Lotharingian scripts.

	Palaeofrankish	Breton	Lotharingian
low–high			
high–low			
low–high–low			
high–low–high			

from one to another. Even the joining and separation of neume forms in the Palaeofrankish family and *coupure* in the Frankish family – the articulation through separation of graphs that would otherwise be joined – must be set within this group of resources, as a way of handling script which could be applied whatever shape the basic forms took. (Of course, 'joining and separation', as I explain *coupure* in this study, could be worked out in more detail in some scripts than in others and in the work of some scribes more than others, as many studies have demonstrated.) Ultimately, even semi-diastematy could be considered a 'strategy', a procedure that could be developed less or more, depending on the purpose intended for the material object being made. That the same script written in one centre could be moulded in different ways for different purposes was seen in the examples from Sankt Gallen set out in Chapter I.3.7.

10.3.1 The Palaeofrankish Family of Scripts

The basis of the Breton and Lotharingian scripts is a set of signs directly derived from the Palaeofrankish script: these signs are all transformations of the four basic Palaeofrankish signs. The forms that indicate movement upwards, downwards, and upwards and downwards, or downwards and then upwards, were altered, each in exactly the same manner, through the addition of a short horizontal stroke to the beginning of each (Example 72). Besides that set of four basic signs, these two scripts share further significant characteristics with the Palaeofrankish, above all the approach to placing of neumes in the interlinear space (a rough diastematy), and the construction of neumes through the basic graphs of points and dashes – such that it is possible to suggest that the Breton and Lotharingian scripts together depend on at least one stage of development beyond the Palaeofrankish, before that (now lost) new system was refined and stylized in different ways to produce two separate scripts.

Example 73 Signs for two rising notes in Oxford Auct F.4.26 and Laon 239 (fol. 14r l.3).

These new ways of writing which eventually became the Breton and Lotharingian scripts, as well as the Aquitanian, all grew out of Palaeofrankish script in a fairly organic fashion: the procedure of moving neumes up and down the page, according to melodic direction, and the treatment of the point/dash as the form for one unchanging sound were directly adopted. Crucially, these scripts also use one form that had been created for the Frankish script, the upward stroke written to signify one high(er) note rather than movement upwards or downwards (*uirga*). Besides the evidence of transformation of the four basic Palaeofrankish signs, this way of using the upward stroke is an effective demonstration of the fact that these scripts are younger, not older, than the Palaeofrankish script. Of course the upward stroke as it was used in the Breton and Lotharingian scripts could not have existed in a Palaeofrankish notation, since it is visually identical to a Palaeofrankish sign but has a different meaning. In the Breton and Lotharingian scripts this simple stroke does not indicate motion but the fact of motion having taken place, or being about to take place, for it indicates a higher note (after or before, depending on its disposition in relation to other signs). For example, one use of the upward stroke common to both scripts was as the second part of the split sign for two rising notes, the higher of the two separate notes (Example 73).

A key aspect of the inclusion of the *uirga* in these three scripts betrays its relation to them. For the sign is used in these three scripts in different ways and to different degrees: it is certainly present in the early Lotharingian notations in Laon manuscripts (written with turns at both ends), as it is also in the early Aquitanian notation written in Albi 44 (written with a turn at the upper end). In none of these notations, however, does it have any independent standing, appearing only as an element in compound neumes and never as a single graph over a single syllable. In the examples of Breton notation written in the ninth century, as well as in Chartres 47, the upward stroke is used much more than in Lotharingian notations, written both as a single neume and in groups of forms for longer groups of notes. Yet in longer passages its use was limited and its meaning qualified in a significant way: in Breton script the stroke was not simply used to mean 'this is a high note', and many high notes were written without using it. What it seems to achieve in this script is the marking of a point at which a melody moves to a higher level (or, conversely, is about to drop to a lower one). Once that new level has been reached, further use of the sign is usually abandoned.

The presence in these scripts of the *uirga* to indicate a single note underlines the most important difference between them and the script system out of which they had been developed: the entire removal from the mindset of the writers and readers of these scripts of signs as indications of movement. Even if derived from a Palaeofrankish model, these

younger scripts are designed to indicate individual notes and combinations of individual notes. Indeed, the introduction of a sign written like an old graph but with a new meaning into a realm of writing directly derived from the Palaeofrankish would have been confusing, were a reader to try to read one of the younger scripts in the same way as the Palaeofrankish: therefore it was essential that a reader understand that this was a different kind of script, based on a different principle of relation between sound and writing. That need is surely what drove not only graphic adjustments of the upward stroke but also, and much more significantly, modification of the four basic signs; the addition of a short horizontal stroke, as a small and regular change, provided a quick and simple way to transform the identity of a music script. A reader used to Palaeofrankish signs would immediately have seen that the younger script (of whichever form) was related but different. Nevertheless, the first step beyond the Palaeofrankish model cannot have involved the wholesale adoption of the *uirga* neume, otherwise it would have been used in similar ways in all the derived scripts. That underlines the fact of a process of diversified change, with the upward stroke meaning 'a higher note' having been taken over from the Frankish system at an early stage, but not as early as the transformation of the four basic signs in order to indicate a different relation of graph and sound.

A further mark of such consciousness of Frankish script procedures was the adoption, when appropriate, of the Frankish approach to placement of neumes: in the examples of Breton script written in the ninth century, the rough semi-diastematy of the Palaeofrankish model is the principal approach, but the diagonal string layout typical of Frankish script may be used for specific melismatic chants, or even for melismatic passages within chants.

Two relatively early developments in this notational family are (a) the working out of a systematic distinction between two forms of sign for two rising notes (joined and separated), and (b) the idea of having a special sign to indicate a repeated note in a falling pattern (*oriscus*): for this last the Breton and Lotharingian scripts have different graphs, revealing that the graphic embodiment of the idea was not shared. An important qualification of the identification of two low–high forms with this immediate post-Palaeofrankish stage is that they relate to the more general procedure of joining and separating that is likely already to have been in place in the early Palaeofrankish notations and that could be used by any individual scribe, more or less, according to his/her requirements of the written record being made. What links the Breton and Lotharingian scripts in the case of the low–high forms is not only the systematic use of two distinct graphs but also the form of the separated sign, incorporating an upward stroke.

The next changes beyond these early moves away from the Palaeofrankish model show scribes discovering new ways of working with the repertory of signs they inherited, inventing new graphs, making graphic changes in order to develop visual distinctiveness, expanding the amount of detail recorded in a musical script and, as just explained, taking over a new sign from Frankish script. These changes were far-reaching and determined by

conscious choices of several kinds. In the script that would eventually become typical in Lotharingia, for example, extensive calligraphic alterations were made: the inclination at which signs were written became highly stylized and fixed, strokes were made more elongated, the ends of strokes were turned, and one entirely new sign with a distinct graph (the *uncinus*) was invented. As the invention of a new sign implies, the changes made in this stage (or series of stages) of development of this script were technical also: many ways of joining the *oriscus* graph to other forms or incorporating it in the middle of longer forms were worked out. By integrating the *oriscus* graph, the procedure whereby continuous forms would indicate faster, less emphasized and unbroken passages, while separated forms would indicate slower, more emphasized, or articulated, passages, could be worked out quite extensively.

Wherever it was developed, the script that became known as Breton was much less graphically stylized than the Lotharingian, as well as less able to convey detail: the most obvious example of this is the procedure of joining and separating, which is worked out rather less in these notations than in those written in Lotharingian script. From a graphic point of view, its sign shapes are simply closer to the Palaeofrankish, and less refined than the Lotharingian. There are also differences of procedure: although the *oriscus* is occasionally ligated with another neume, this joining is much less common than in Lotharingian notations. It could be argued that this is the business of individual scribal habit, but study of notations beyond those examined in detail in Part II above shows that such habits were more embedded in the practice of one script than the other.

A good example of the way in which an earlier, relatively flexible way of writing a sign could become more stylized and fixed is offered by *quilisma* forms. There is no example of this sign in the Palaeofrankish *Doxa* notation, or in the Vienna antiphoner fragment; in other words, the only extant examples of this sign in Palaeofrankish notations are in later ninth- or tenth-century notations. This leaves open the possibility that the sign did not exist in the earlier Palaeofrankish script, and became an element in these later examples through transference from another script. Yet the *quilisma* forms in the Wolfenbüttel fragments make a strong case for this neume having belonged to an earlier Palaeofrankish script. Here the *quilisma* is written in smaller and larger sizes, and with shorter and longer strokes at the upper end (Example 74a). On two folios of the Düsseldorf sacramentary (UB D1) notated by one scribe the *quilisma* has an even wider range, stretching from a form written with an angle to a fluid, curved stroke (Example 74b). In both the Breton and Lotharingian scripts, the way in which a *quilisma* was written became more fixed, in the former written in the most angled form, with the first stroke written short and almost perpendicular (Example 74c). The Lotharingian form is also akin to a Palaeofrankish *quilisma* graph, but further along the curved spectrum, and it was more deliberately stylized, with a half-circle followed by a slanted stroke upwards (Example 74d).

Example 74a *Quilisma* forms in Wolfenbüttel HAB 476 endleaves.
      b *Quilisma* forms in Düsseldorf UB D 1.
      c A Breton *quilisma* form in Leiden BPL 25.
      d A Lotharingian *quilisma* form in Laon 239.

(a)

(b)

(c)

(d)
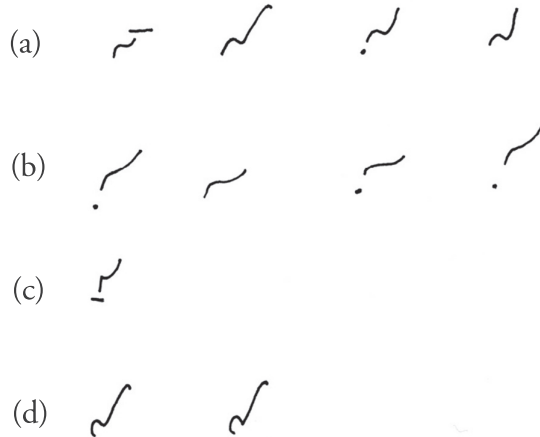
In summary, the new ways of recording musical sound that eventually became the regional scripts, Breton and Lotharingian, were developed from a Palaeofrankish model, adopting its procedure of moving signs up and down the page according to melodic direction, treatment of the point (or dash) as the sign for one unchanging sound, and its sign repertory, modified as required to signal their different basis in relation to sound. The influence of the new Frankish script is also evident in the form of specific characteristics drawn into these scripts, modifying Palaeofrankish procedures as and when they could be useful.

10.3.2 The Frankish Family of Scripts

Notations written in Frankish script are markedly different from those of the Palaeofrankish family in several ways: they are entirely based on a principle of relation between graph and sound that is different from the Palaeofrankish script itself; they are designed to look different from the Palaeofrankish scripts; they are written out in the space above the text according to a different procedure in relation to note pitch and placement on the parchment; and the fundamental signs were largely created together, rather than by many scribes, accumulating innovations, as in the various scripts that were more directly developed from the Palaeofrankish model. The fundamental Frankish signs are typical of most early examples, spread across a broad area. Unlike the various scripts of the Palaeofrankish family, which were written in defined regions, the Frankish script was eventually widely diffused: by 900, notations in this script were being written in northern and central France, northern Spain, Italy, Switzerland, southern Germany and Lotharingia.

Thus, the Frankish script designed in the early ninth century became the basis for institutional, and later, regional ways of writing, as had the Palaeofrankish, but, unlike the variation within the Palaeofrankish family, the fundamental differences between Frankish notations were much more graphic – and thus probably the result of scribal concerns with aesthetics and local identity – than procedural. Only the use of two forms of sign for two rising notes in East Francia and Italy and just one in West Francia signals an early significant change in the way this Frankish script was written. In contrast, the highly distinctive Frankish *quilisma* graph can be found in all notations of this kind. It is only the graphic details of each individual notation that allow association with a specific centre.

What distinguishes some examples of Frankish script written in the late ninth and early tenth centuries is the calligraphic care with which they are written and the extent to which detail is used to record nuance. The contrast between the relatively uncontrolled neume forms written by the scribe of the Graz Gradual fragment and the consistent forms written by a Bobbio scribe is marked: that contrast is not the result of different techniques of notation but more an attitude towards writing. In terms of sheer calligraphic elegance, the greatest contrast among Frankish notations written in the first hundred years of their use is between Engyldeo's rough signs, written with a nib not much thinner than that used for the text of *Psalle modulamina*, and the highly stylized work of the scribe of CSG 359, written with a nib noticeably finer than that used for the text.

Indeed, in the decades that had passed between Engyldeo's writing *Psalle modulamina* at the back of a commentary on St Luke's gospel and the making at Sankt Gallen of a special record of soloists' chants, it was a process of refinement that drove changes in these scripts. By using a narrower nib, it was possible to shape angles and curves in the little graphs much more clearly, as well as to write points in addition to short dashes. It was also possible to be very clear about the way in which a stroke ended: with a broader nib, the point at which it was lifted from the parchment would be marked by a larger pool of ink than where a narrower nib was used. In this way control of individual pen strokes could support greater differentiation, between points and dashes, between strokes which ended without graphic elaboration and strokes onto the end of which a short line (*episema*) was added, between angles and curves, between longer and shorter strokes. These are the kind of graphic distinctions that set the notation written in CSG 359 apart from those written in the contemporary missal from Bobbio or the Graz fragments. They show the scribes of Sankt Gallen observing a rigorous graphic discipline in the service of recording musical sound in considerable detail. Whether such graphic discipline could have been achieved in any centre anxious to control music writing in such ways is unclear; yet, that that desire or need may not have been felt by all is indicated by the juxtaposition of Bobbio and Sankt Gallen. There is no reason to suppose that Bobbio did not have access to the same script models as Sankt Gallen: the two abbeys had a shared foundation history – Sankt Gallen founded by a disciple of Columbanus, who had himself travelled further south and founded Bobbio – and are likely to have been in frequent contact. Moreover, in precisely

this period, the abbey of Bobbio was responsible for the production of many fine books, of which the missal – with its handsome decorated initials – is only one.[60] Finally, Notker's prefatory dedication of the *Liber Ymnorum* to Liutward, Bishop of Vercelli and Abbot of Bobbio, underlines the mutual recognition of the two abbeys in the last decades of the century. That close connection implies that the calligraphic care and semiological finesse that had become possible at Sankt Gallen was either not sought at Bobbio or not applied in all books of music written there.

There is only one script developed from the Frankish model in the ninth century in which many new neume forms (as distinguished from graphic refinements) appear: this is the script written in Hispanic manuscripts and used for complex melodies in BNF nal. 2199, copied in the late ninth century, and the León antiphoner, copied in the first quarter of the tenth century. These notations are replete with forms not encountered elsewhere, as well as special ways of using the forms available in the Frankish template. Evidently, this was an especially elaborated version of the Frankish model, in use in a cultural situation in which a different liturgical rite with its own repertory of chants was sung. Just as the Nonantolan script was developed from a Palaeofrankish model in a quite specific and unique way, so this Old Hispanic script also demonstrates how a scribe or group of scribes could set out to extensively redesign and develop a script model.

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[60] See Crivello, *La miniatura a Bobbio.*

11

The Carolingian Invention of Music Writing

In a fine psalter made at Reims in 883/4,[1] liturgical material added after the 150 psalms includes a litany, twelve canticles and hymns, the Gloria, *Quicumque uult* and Creed, a collection of prayers and a short *capitula* with responsories, office by office. A series of prefaces to the psalter are set at the beginning of the book. This is therefore a book that combines the elements typical of a psalter made for private reading and study with parts of the liturgy for the divine office. After the collect that follows Psalm 150, an inscription in capital letters written in gold states: '*Achadeus misericordia dei comes. hunc psalterium scribere iussit*'.[2] Yet it is quite unclear for what purpose the book was intended, that is, whether for this lay aristocrat or for presentation by him to an institution of some kind. The book was finely made, with a full-page decorated B at the beginning of the psalter, elaborately decorated capitals for every psalm opening and framed arcades for the litany; offering 'remarkable examples of the Rheims ornament style' and using copious amounts of gold leaf,[3] it must have been made in a major centre with access to the best contemporary illuminators.

In this carefully manufactured book, musical notation appears for one responsory, *Ab omni uia mala* (Figure 34); the most natural assumption would be that this isolated and short passage of notation was added later by a capable and enthusiastic scribe. Close study suggests otherwise: at several points the text scribe separated syllables to allow horizontal space for melismatic parts of the melody. These spaces are much more substantial than any seen in other surrounding texts, including between words. Whether or not the musical notation was written by the text scribe,[4] it appears contemporary, in the same colour of ink as the main

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[1] Cambridge Corpus Christi College 272. This very precise date depends on the names in the litany; see the manuscript description in *Parker Library on the Web*, with further bibliography.

[2] 'Achadeus, count by God's mercy, ordered this psalter to be made.'

[3] Florentine Mütherich, 'Carolingian Manuscript Illumination in Rheims', in Koert van der Horst, William Noel and Wilhelmina C. M. Wüstefeld (eds.), *The Utrecht Psalter in Medieval Art: Picturing the Psalms of David* (Utrecht: HES, 1996), 104–19, at 116.

[4] As suggested by K. Drew Hartzell, *Catalogue of Manuscripts Written or Owned in England up to 1200 Containing Music* (Woodbridge: Boydell, 2006), 50.
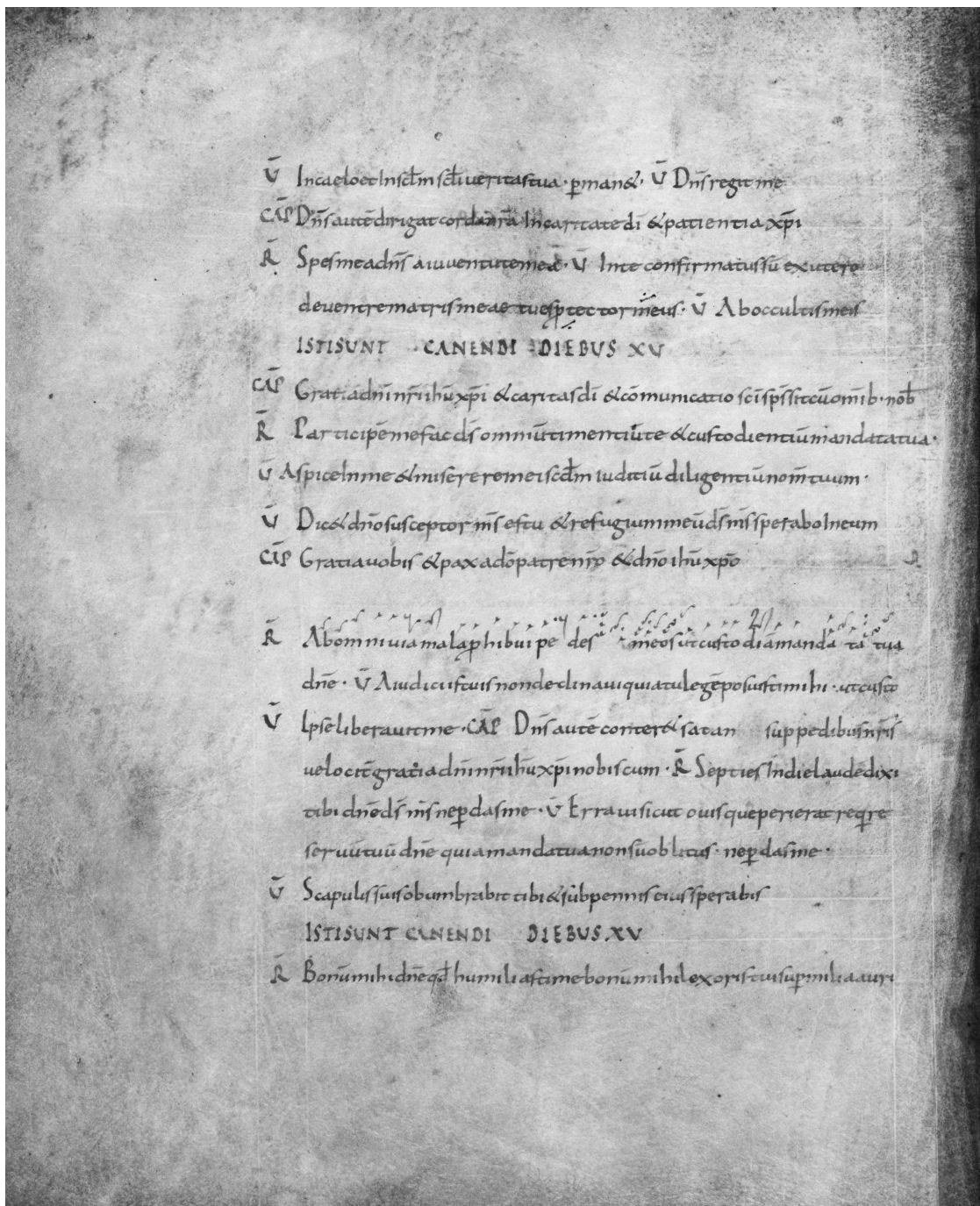
Figure 34 Cambridge, Corpus Christi College ms 272, fol. 174v.

text and planned for. It lasts for one line only, not even continued over the last word of the chant that appears at the beginning of the next line. It is as if the text scribe, copying from an exemplar that included musical notation, forgot *not* to copy it and only corrected himself as he began a new line. If that is a correct reading of this unusual example, then musical notation had by 883/4 become quite normal (at Reims), the choice of whether to use it or not remaining open to a scribe making a book.

That musical notation had become a widely recognized and adopted writing technique by the end of the ninth century could also be argued on the grounds of the number of surviving examples: with fully notated books and fragments of notated books amounting to over thirty, and datable additions also over thirty in number – leaving aside a further fifty or so examples that might have been written in the ninth century – there can be little doubt of the degree to which this new writing practice had penetrated literate society. While the exact place of origin of this material is often difficult to establish, it is possible to identify securely examples written at St Amand, Laon, St Germain des Prés, Tours, St Benoît-sur-Loire at Fleury, Autun, Essen and Werden, Echternach, Sankt Gallen and Reichenau, Bobbio and Nonantola. Other major centres, such as St Denis, Corbie, Reims, Trier, Lorsch, Würzburg and various imperial courts may be represented among extant examples, but this cannot be determined with certainty, since the musical entries concerned cannot be securely dated. If we then include examples made at an unknown centre in the Iberian peninsula, the geographical distribution of musical notations is extensive: it is only in northern German areas, England, Rome and Montecassino to the south that there is no evidence for the use of musical notation before 900.

This wide geographical spread provides a good starting point for considering the relation of music writing to more general aspects of writing: the uses, manner of support and production of music writing, and ways of thinking about its place in Carolingian society. The extent to which writing was used by the Carolingians, not only for commercial, legal and educational purposes but also for more transient or personal objectives, including cures for baldness, charms and spells,[5] may not distinguish this society from those of late antique Rome, or Merovingian Francia. Even the misuse of writing, the claim that certain heretical texts 'contrary to catholic faith' had fallen from heaven,[6] or the use of psalter or gospel texts as the basis of divination,[7] was surely not new under the rule of Pippin, Charlemagne and his sons and grandsons. Nevertheless, such belief in the power of writing, giving it a status

[5] David Ganz, 'Book Production in the Carolingian Empire and the Spread of Caroline Minuscule', in Rosamond McKitterick (ed.), *The New Cambridge Medieval History: II: c.700–c.900*, (Cambridge University Press, 1995), 786–808, at 808.

[6] Such an instance is referred to in Charlemagne's *Admonitio generalis* of 789: see *Die Admonitio generalis Karls des Großen*, ed. Hubert Mordek, Klaus Zechiel-Eckes, Michael Glatthaar, MGH Fontes Iuris Germani Antiqui 16 (Hanover: Hahnsche Buchhandlung, 2012), no. 76.

[7] As forbidden in a second capitulary of 789, the so-called 'Double Edict of Commission': see *Capitularia regum Francorum* I, ed. Alfred Boretius, MGH Leges II/1 (Hanover: Hahnsche Buchhandlung, 1883), no. 23/20 at p. 64.

quite independent of (and with power beyond) speech, draws attention to its centrality in the spiritually as well as economically aspirational society of Carolingian Europe. Writing and reading became the principal tools of Christianization, as ever wider parts of the European mainland were evangelized. Taught to read and write and to comprehend the grammar of the Latin language, priests, clerics and monks had responsibility for instructing those in their care in the precepts of Christian belief and the correct interpretation of the 'mysteries of divine scripture'.[8]

11.1 PREPARING THE WORD OF GOD

By the end of the eighth century, a class of written material of fundamental importance for practitioners of music – the texts read and sung in the liturgy – had become the object of codification in forms that were more comprehensive and exact than those in use earlier. It was no longer enough to have bodies of local practice partially preserved in writing; now everyone should follow the Roman liturgical model,[9] and priests should have access to corrected books in order to be able 'to petition God in a proper way'.[10] If there was need to copy the most important liturgical books, the gospels, psalter or sacramentary, the commission should be entrusted to men of mature age, able to produce good copies 'with utmost diligence', rather than to young men, who might corrupt them.[11] Most telling because of their closeness to musical practice, the collections of chant texts in books called 'antiphoners' now became more strictly controlled. Rather than presenting short incipits, or passages of indeterminate length, direct and modified scriptural quotations were now regulated, so that the precise text intended for singing was recorded,[12] while users of chant books were highly aware of the use of different translations of the psalter in the chants they were required to sing.[13] All this is typical of a more generalized new attitude to the use of writing and can be noticed far beyond the liturgy: in a capitulary of 805 Charlemagne decreed that scribes

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[8] 'ut facilius et rectius divinarum scripturarum misteria valeatis penetrare': from the *Epistola de litteris colendis* issued under Charlemagne in the late eighth century. See *Capitularia regum Francorum*, ed. Boretius, no. 29, at p. 79, and Thomas Martin, 'Bemerkungen zur "Epistola de litteris colendis"', *Archiv für Diplomatik* 31 (1985), 227–72.

[9] *Die Admonitio generalis*, no. 78.

[10] 'dum bene aliqui Deum rogare cupiunt'. *Die Admonitio generalis*, no. 70; see also *Capitularia regum Francorum*, ed. Boretius, no. 28 (dated 818/19), at p. 279, with the famous description '*sive ceteros libellos sibi necessarios bene correctos habeant*'.

[11] 'Et pueros vestros non sinite eos vel legendo vel scribendo corrumpere; et si opus est evangelium, psalterium et missale scribere, perfectae aetatis homines scribant cum omni diligentia.' I translate 'missale' as sacramentary, since books containing the collected prayers, readings and chants were not known in Francia at this date, and the reference is plainly to the priest's book of prayers and liturgical instructions.

[12] See Rankin, 'The Making of Carolingian Mass Chant Books', and 'Beyond the Boundaries of Roman-Frankish Chant'.

[13] See Rankin, 'Singing the Psalter in the Early Middle Ages'.

should 'not write badly',[14] without mention of specific purposes, while the decrees of Louis the Pious's reform council of 816 were to be copied 'clearly and openly', 'lest they be corrupted by the error of the scribe or abridged by anyone'.[15]

To judge this new attitude as directly determined by reduced dependence on memory would be too easy and a misreading of the evidence. Certainly dependence on memory was being shifted, but more as a result rather than as a cause of this Carolingian drive for *correctio*. For the fundamental motivation of this mentality that valued *correctio* so highly was the fear of God, the desire to please God and the need to be heard by God.[16] Therefore:

> Let it be known to your devotion, most pleasing in the sight of God, that we, along with those faithful to us, have considered it useful that the monasteries entrusted to us to govern by the favour of Christ, in addition to a manner of life according to the rule and a manner of living according to holy religion, should devote effort to consideration of letters, those who by the gift of the Lord are able to acquire that learning, according to the capacity of each for erudition; so that, just as the rule ordains and adorns integrity of conduct, in the same way perseverance in teaching and learning ordains and adorns succession of words, so that those who would please God by right living, might not neglect also to please him by right speaking.[17]

A priest or monk should study correct speech so that

> each one should discern what he desires to accomplish, so that the mind may know more fully that it should strive to such a degree that

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[14] 'De scribis ut non vitiose scribant.' *Capitularia regum Francorum*, ed. Boretius, no. 43, at p. 121.

[15] 'ut eam solerti cura praedicti missi nostri omnes, prout insinuaveris transcribere absque ulla depravatione et detruncatione praemoneant; quoniam, qualiter diligenter studioseque, distincte et aperte transcribatur, illos satis instituimus'. *Capitularia regum Francorum*, ed. Boretius, no. 169, at p. 339. This translation from Ganz, 'Book Production', 793.

[16] For a general consideration, with further bibliography, see Arnold Angenendt, 'Libelli bene correcti. Der "richtige Kult" als ein Motiv der karolingische Reform', in Peter Ganz (ed.), *Das Buch als magisches und als Repräsentationsobjekt*, Wolfenbütteler Mittelalter-Studien 5 (Wiesbaden: Harrassowitz, 1992), 117–35.

[17] This translation is based on (but substantially altered from) that in Henry Royston Loyn and John Percival, *The Reign of Charlemagne. Documents on Carolingian Government and Administration* (New York: St Martin's Press, 1975), 63–4. 'Notum igitur sit deo placitae deuotioni uestrae, quia nos una cum fidelibus nostris considerauimus utile esse, ut per monasteria nobis Christo propitio ad gubernandum commissa praeter regularis uitae ordinem atque sanctae relegionis conuersationem etiam in litterarum meditationibus eis, qui donante domino discere possunt, secundum unius cuiusque capacitatem discendi studium debeant impendere, qualiter, sicut regularis norma honestatem morum, ita quoque docendi et discendi instantia ordinet et ornet seriem uerborum, ut, qui deo placere appetunt recte uiuendo, ei etiam placere non neglegant recte loquendo.' I have used the newly edited text from an early Oxford source: see *Epistola de litteris colendis*, ed. Martin in his 'Bemerkungen zur "Epistola de litteris colendis"', 232.

the tongue may concur in the praises of the omnipotent God, without hindrances or misrepresentations. For since it is agreed that misrepresentations are to be avoided by all men, how much more those who are proven elect for this purpose alone – [namely] that they should specifically serve truth – should avoid [them] insofar as possible.[18]

But why should this matter? If the intention of praise was healthy, why should the detail of expression be of concern?

For since during these last years written documents have been sent to us from various monasteries, in which it was indicated what the brethren abiding there for us were disputing in sacred and pious discussions, we recognized in most of these aforementioned documents good intentions as well as uncouth diction; for while pious devotion was expressing faithfulness within, the illiterate tongue, because of negligence of learning, was not seen to utter it outwardly without censure.[19]

and thus

it came about that we began to fear that their lack of knowledge of writing might be matched by a more serious lack of wisdom in the understanding of holy scripture. We all know well that, dangerous as are the errors of words, yet more dangerous are the errors of understanding.[20]

Only through the study of letters, leading to correct use and understanding of language, could readers prevail in

gain[ing] strength to penetrate more easily and more properly the mysteries of divine scriptures.[21]

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[18] 'Debet uero quisque discere, quod optat implere, ut tanto uberius, quid agere debeat, intelligat anima, quanto in omnipotentis dei laudibus sine mendaciorum offendiculis concurrerit lingua. Nam cum omnibus hominibus uitanda constet esse mendacia quanto magis illi secundum possibilitatem declinare debent, qui ad hoc solummodo probantur electi, ut seruire specialiter debeant ueritati.' *Ibid.*, 232.

[19] 'Nam cum nobis in his annis a nonnullis monasteriis saepius scripta dirigerentur, in quibus, quid pro nobis fratres ibidem commorantes in sacris et piis orationibus decertarent, significaretur, cognouimus in plurimis praefatis conscriptionibus eorundem et sensus rectos et sermones incultos; quia, quod pia deuotio interius fideliter dictabat, hoc exterius propter neglegentiam discendi lingua inerudita exprimere sine repraehensione non uidebat.' *Ibid.*, 232–3.

[20] 'Unde factum est, ut timere inciperemus, ne forte, sicut minor erat in scribendo prudentia, ita quoque et multo minor esset quam recte esse debuisset sanctarum scripturarum ad intellegendum sapientia. Et bene nouimus omnes, quia, quamuis periculosi sint errores uerborum, multi periculosiores sunt errores sensuum.' *Ibid.*, 233.

[21] 'ut facilius et rectius diuinarum scripturarum misteria ualeatis penetrare.' *Ibid.*, 233.

With this mastery of letters and rhetoric, and knowledge of divine mysteries, those who led ritual celebrations would be more able to inspire devotion in the hearts of worshippers:

> We wish that you, as befits soldiers of the Church, be inwardly devout as well as outwardly learned, virtuous in living properly as well as scholarly in speaking properly, so that whoever seeks you out in the name of the Lord for the purpose of seeing, and for the nobility of sacred discourse, just as his sense of sight should be edified by your visage, so also may his sense of hearing be instructed from your wisdom – moved by [your] reading as well as chanting; and he who was coming merely for seeing may depart rejoicing – instructed through [both] sight and hearing – giving thanks to the omnipotent Lord.[22]

In a later medieval copy of the letter (in a manuscript from St Arnulf of Metz, now destroyed), it is urged that this command go out to all representatives of the church – bishops, priests, abbots and monks:

> Do not neglect, therefore, if you wish to have our favour, to send copies of this letter to all your suffragans and fellow-bishops and to all the monasteries.[23]

The trajectory from centrally determined aspirations for the kingdom through proper instruction of the people in Christian doctrine to well-corrected books of liturgical texts had become one of this dynasty's most cherished programmes.

It was in this context of concern with the spiritual needs of the people, and therefore the education of their religious leaders, that an enormous expansion of book production was undertaken in the late eighth and ninth centuries:[24] to understand and study the meaning of the scriptures, students needed access to grammars, commentaries on scripture, histories and encyclopedias of the Christian world, as well as the books that directly supported their daily

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[22] 'Operamus enim vos, sicut decet ecclesiae milites et interius deuotos et exterius doctos, castos bene uiuendo et scolasticos bene loquendo, ut, quicunque uos propter nomen domini et sanctae conuersationis nobilitatem ad uidendum expetierit, sicut de aspectu uestro aedificetur uisus, ita quoque de sapientia uestra, quam in legendo seu cantando perceperit, instruatur auditus et, qui ad uidendum solummodo uenerat, uisione et auditione instructus omnipotenti domino gratias agendo gaudens recedat.' *Ibid.*, 234.

[23] 'Huius itaque epistolae exemplaria ad omnes suffragantes tuosque coepiscopos et per uniuersa monasteria dirigi non neglegas, si gratiam nostram habere vis.' *Ibid.*, 234.

[24] For numbers and categories of books and places where they were produced, see Ganz, 'Book Production', 786–9. See also Bernhard Bischoff, 'Panorama der Handschriftlichenüberlieferung aus der Zeit Karls der Großen', in *idem* (ed.), *Das geistige Leben. Karl der Grosse: Lebenswerk und Nachleben* (Düsseldorf: L. Schwann, 1965), 233–254; rep. in *idem*, *MAS* III (Stuttgart: Hiersemann, 1981), 5–38; trans. Bernhard Bischoff, *Manuscripts and Libraries in the Age of Charlemagne*, trans. and ed. Michael Gorman (Cambridge University Press), 20–55.

lives and worship – gospels and other books of biblical readings, full bibles, psalters, sacramentaries, antiphoners for mass and office, computi for the reckoning of time, and rules for communal life (of monks or of canons). These books were made in monasteries and cathedral chapters, in those same situations in which they were read, studied and understood. This immediacy of relation between production and use ensured the appropriateness of manufacture to function: much of what is new, or newly clarified, in Carolingian books reflects those ways in which *correctio* was to be followed through.

The principal new feature in Carolingian book production is, of course, a new minuscule script characterized by its use of 'a uniform alphabet with no cursive letterforms';[25] as a script that had wide utility since it could be used to copy texts in ancient and contemporary European languages and that was not difficult to write competently or to read, Caroline minuscule was widely adopted across the Carolingian empire. In the central parts of the empire, many institutions were using the script by 800; even those establishments most conservative in this regard, such as Fulda, had by the middle of the ninth century given up older traditions of script (insular, in the case of Fulda). The use of this new script beyond northern France and the central regions of the empire was more variable. In some Italian centres, uncial script remained in use for all kinds of texts beyond 800;[26] the purple cantatorium of Monza, made in the middle third of the ninth century and written throughout in gold uncials, is one of the best examples. Although Caroline minuscule script was written in northern Italy in the first half of the ninth century, many hands retained pre-Caroline features, and manuscripts made here in the late eighth and early ninth centuries give the 'impression that very diverse, predominantly locally formed styles of writing prevailed'.[27] In Rome and the regions to the south, the new Caroline minuscule only began to be adopted much later: not before 850 in Rome and only in the twelfth century in Montecassino, where the Beneventan script was used. Similarly, in Spain, Visigothic script remained exclusively in use until the late eleventh century. Nevertheless, in books made in those regions under direct Carolingian control, Caroline minuscule script became an essential tool in the expanding production of books, a vehicle for the widespread promotion of shared beliefs and understanding. For it was the size of the area across which it was used, and the 'diversity of energies' poured into its development,[28] that determined its dominance among the many choices available to scribes and ultimately its overwhelming success.

Set centre stage in an intensive engagement with books and textual clarity, Caroline minuscule script is certainly the most prominent aspect of new scribal practices in late eighth- and ninth-century Francia, but it is only one of a long series that includes the wide

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[25] Ganz, 'Book Production', 790; see also David Ganz, 'The Preconditions for Caroline Minuscule', *Viator* 18 (1987), 23–43.

[26] Bischoff, 'Panorama', *MAS* III, 28–9.

[27] *Ibid.*, 33.

[28] Ganz, 'Book Production', 789.

introduction of new conventions of punctuation, the partial separation of words (rather than writing them continuously), care for layout on the page, hierarchies of size and script type to allow easy visual differentiation of different elements of text and, not least, the emergence of musical scripts. These all belong to the new techniques of writing and book-making observable in Carolingian manuscripts. The potential of writing and of presentation of writing on parchment pages was being explored with new vigour, supported by centrally approved aims and resources. On a very broad front, Charlemagne was interested in the collecting of information, in setting up structures for the communication of information[29] and in the correctness of expression of that information. Viewed from this wider perspective, the invention and development of ways of representing music in writing has many possible rationales.

11.2 PERFORMING THE WORD OF GOD

Concern with the clear and correct delivery of scriptural readings was not new in the late eighth century. About this much had previously been written, including a long statement by Isidore on the qualities necessary in a *lector*:

> However, whosoever is to be promoted to a rank of this kind shall be deeply versed in doctrine and books, and thoroughly adorned with the knowledge of meanings and words, so that in the analysis of *sententiae* he may understand where the grammatical boundaries occur; where the utterance continues, where the *sententia* concludes ... Even more, there is in him the knowledge so that those ambiguous points of the sentences will be tended to. For there are many things in Scripture which, unless they are expressed in a proper manner, result in a contrary opinion.[30]

Yet concentration on the link between scribal preparation and the delivery by a reader of scripture in such a way as to render meaning clearly and correctly *was* certainly new in the late eighth and early ninth centuries.[31] In verses composed as *tituli* for a scriptorium, Alcuin laid out a programme for scribes, explaining what they should do, how they should do it and why:

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[29] For a recent consideration of these issues, see Jennifer Davis, *Charlemagne's Practice of Empire* (Cambridge University Press, 2015), 303ff.

[30] The first part of this translation from Parkes, *Pause and Effect*, 35; the second part ('Even more...') from *Isidore of Seville. De ecclesiasticis officiis*, trans. and introduction by Thomas L. Knoebel (New York: Newman, 2008), 82. 'Qui autem ad huiusmodi promouetur gradum, iste erit doctrina et libris inbutus, sensuumque ac uerborum scientia perornatus, ita ut in distinctionibus sententiarum intellegat ubi finiatur iunctura, ubi adhuc pendeat oratio, ubi sententia extrema claudatur ... In quo magis et illa ambigua sententiarum adhibenda cognitio est. Multa enim sunt in scripturis quae, nisi proprio modo pronuntientur, in contrariam recidunt sententiam': *Sancti Isidori episcopi Hispalensis de ecclesiasticis officiis*, ed. Christopher M. Lawson, CCSL 113 (1989), II.XI (p. 70).

[31] For a general consideration of this topic see Parkes, *Pause and Effect*, 35ff.

> May those who copy the pronouncements of the holy law sit here.
> Here let them take care not to insert their vain words,
> lest their hands make mistakes through such foolishness.
> Let them resolutely strive to produce emended texts
> and may their pens fly along the correct path.
> May they punctuate the proper meaning by cola and commata
> and put each point in its proper hierarchy
> so that the *lector* reads nothing false nor suddenly falls silent
> when reading before the pious brothers in church.
> It is a noble task to write sacred books
> for the writer is not in want of his reward.
> To avoid foulness it is better to write books,
> one person serves his stomach, the other serves his soul.
> Whoever reads the holy words of the fathers
> can offer, like a teacher, many new or old things.[32]

There is good manuscript evidence of Alcuin's own activity in preparing texts in material form for the act of reading.[33] A collection of epistle readings for the mass ('*Comes*') made by Alcuin has survived in a manuscript copied in the third quarter of the ninth century at St Amand: the connection to Alcuin is assured by an explanatory supplement probably composed by Helisachar, Chancellor of Louis the Pious (and himself much concerned with the revision of liturgical texts).[34]

> This book which ecclesiastics call the *comes*, your perspicacity, [O]
> reader, is taken from that book, which it is agreed was polished and
> corrected by that most erudite man Albinus, at the command of the
> most wise emperor Charles, with the file of correctness.[35]

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[32] Hic sedeant sacrae scribentes famina legis, / Nec non sanctorum dicta sacrata patrum; Hic interserere caveant sua frivola verbis, / Frivola nec propter erret et ipsa manus, Correctosque sibi quaerant studiose libellos, / Tramite quo recto penna volantis eat. Per cola distinguant proprios et commata sensus, / Et punctos ponant ordine quosque suo. / Ne vel falsa legat, taceat vel forte repente /Ante pios fratres lector in ecclesia. Est opus egregium sacros iam scribere libros / Nec mercede sua scriptor et ipse caret. Fodere quam vites melius est scribere libros, / Ille suo ventri serviet, iste animae. Vel nova vel vetera poterit proferre magister /Plurima, quisque legit dicta sacrata patrum.

Poetae latini aevi Carolini I, ed. Ernest Dümmler, MGH Poetarum latinorum medii aevi I (Berlin: Weidman, 1881), 320; translation from Ganz, 'Preconditions', 33.

[33] On this, see also Parkes, *Pause and Effect*, 35.

[34] Helisachar's authorship of this passage was first proposed by Germain Morin, 'Une rédaction inédite de la préface au Supplement du Comes d'Alcuin', *RB* 29 (1912), 341–8; the full supplementary preface text was edited by André Wilmart, 'Le lectionnaire d'Alcuin', *EL* 51 (1937), 136–97.

[35] 'Hunc codicem qui ab ecclesiasticis uiris comes appellatur. tua lector nouerit perspicacitas ab eo codice sumptum. quem constat ab Albino eruditissimo uiro Karolo sapientissimo imperatore praecipiente lima rectitudinis esse politum atque emendatum.' (BNF lat. 9452, fol. 126r). In this transcription I have retained the original punctuation system of low and high points.

Helisachar's preface continues with an explanation of what was judged by Alcuin to be problematic and the steps he took to improve the delivery of readings:

> Although many people have this book, yet by many it is read falsely and not at all clearly. For this reason it was a concern of the same worshipper of God that it should be corrected by the aforementioned man into a pure state, and it should be punctuated with marks of punctuation of the grammatical art for the sake of delivery. In this way the text of this book should open an even pathway to people reading it, and it should bring nothing dissonant to the ears of those hearing it, [and] it should not allow simple people to wander. But our care was that this be transcribed with correction and punctuation, just as it had been corrected and punctuated by the same master. Therefore we beg that the same care and diligence be preserved in the transcription by those who are to transcribe this.[36]

The evidence of Alcuin's work in dividing the text into phrases, and marking these off with punctuation signs, can be seen in the manuscript itself: in this, the text is written out with extreme care and clarity, using a double system of points, set low for medial pauses, and high for final pauses, with capital letters at the beginning of new clauses after these high points. With Alcuin's views on the presentation of text as a model, it is possible to see in precise ways what Carolingian leaders intended for the act of reading: how it should be accomplished and why.

In the form of prayers for readers and statements made at the ordination of readers, there are many formal counterparts to Alcuin's and Helisachar's words that express similar aims. In a prayer that is one of a series for the different parts of a monastery included in both the Gelasian and the Gregorian sacramentaries, concern with the relation between writing and the capturing of meaning is succinctly expressed:

Prayer in the Scriptorium

> Bless O Lord this scriptorium of your servants and all who dwell herein,
> that whatsoever of divine scripture is read or copied by them, they may
> grasp the sense and fulfil it in their work.[37]

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[36] 'Qui codex licet a multis haberetur. a plerisque tamen mendose et non bene distincte legebatur · Ob id studii fuit eiusdem Dei cultoris ut a praefato uiro ad purum corrigeretur. et distinctionibus artis grammaticae pronuntiandi gratia distingueretur · Ita uidelicet. ut legentibus eiusdem codicis textus iter planum panderet. et audientium auribus nihil inconsonum afferret. simplices quosque errare non sineret · Nobis autem curae fuit ita hunc emendate atque distincte trans scribere. sicut ab eodem magistro emendatus extat atque distinctus· Praecamur itaque. ut ab his qui hunc trans scripturi sunt. nihilominus eadem cura et diligentia in trans scribendo conseruetur ·' (BNF lat. 9452 fol. 126r–v).

[37] 'Oratio in scriptorio. Benedicere digneris domine hoc scriptorium famulorum tuorum et omnes habitantes in eo, ut quicquid hic diuinarum scripturarum ab eis lectum uel scriptum fuerit, sensu capiant

In parallel, a prayer for the *lector* implores that he may understand what he reads:

> Turn aside, we beg, O Lord, from this your servant the spirit of pride, that, reading humbly, he might grasp the meaning and the understanding of the lection.[38]

Carolingian scribes, exhorted 'to open an even pathway' to people reading a book ['ut legentibus eiusdem codicis textus iter planum panderet'],[39] found new ways to clarify the texts they copied: the best Carolingian examples – the bibles and gospel books made at Tours after 800, and sacramentaries such as that made for Drogo in Metz between 845 and 855 (BNF lat. 9428) – are both clear and beautiful to experience as visual objects.

Understanding and correctly rendering the meaning of a passage of text, in terms of syntax, was one of two aspects of the task of reading to which Isidore had enjoined the *lector*. The other was, of course, the manner of delivery, the extent to which, through oratorical art, the *lector* could reach his listeners: he will possess the strength of the pronouncement so that he might make a deep impression on the minds and senses of all the people for their understanding'.[40]

It is not simply Isidore's words but his whole approach to how lectors should act that draws directly on the antique tradition of rhetoric.[41] So that the people will be moved by what the *lector* reads, he must also be expressive, modulating his voice to indicate sorrow, scolding, exhortation or whatever is appropriate.[42] But whatever he seeks to achieve expressively, it should not be so overdone that he himself becomes the object of attention: for this reason it is with his voice rather than with his body that he should seek to deliver meaning.[43] This preference for *pronunciatio* over *actio* comes directly from the late antique Roman rhetorical tradition,[44] even if it is especially stressed in Christian writings.

Set beside these statements about the tasks and abilities of those who read in the church, what is said of those who sing? What is it that matters in their singing and how might it be regulated? Mention of the Roman rhetorical tradition is a useful joining point to sentiments

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opere perficiant.' *Le Sacramentaire Grégorien*, ed. Jean Deshusses, 3 vols., Spicilegium Friburgense 16, 24, 28 (3rd rev. edn, Fribourg: Éditions universitaires, 1992), I, no. 133.

[38] 'Auerte quesumus domine ab hoc famulo tuo spiritum elationis. ut humiliter legens. sensum et intellectum capiat lectionis' (Laon BM 118, fol. 63r).

[39] See n. 36 above.

[40] *Isidore*, trans. Knoebel, 82. 'uim pronuntiationis tenebit ut ad intellectum mentes omnium sensusque permoueat': *Sancti Isidori . . . de ecclesiasticis officiis*, II.XI.

[41] On the textual sources, see *Sancti Isidori . . . de ecclesiasticis officiis*, II.XI.

[42] *Ibid.*

[43] *Isidore*, trans. Knoebel, 82. 'Auribus enim et cordi consulere debet lector, non oculis, ne potius ex se ipso spectatores magis quam auditores faciat.' *Sancti Isidori . . . de ecclesiasticis officiis*, II.XI.

[44] See Jan Ziolkowski, 'Do Actions Speak Louder than Words? The Scope and Role of *pronunciatio* in the Latin Rhetorical Tradition, with Special Reference to the Cistercians', in Mary Carruthers (ed.), *Rhetoric beyond Words: Delight and Persuasion in the Arts of the Middle Ages* (Cambridge University Press, 2010), 124–50, at 127.

about singing in church, since the same anxiety about self-promotion threads its way through the statements of early Christian writers, using similar categories. The behaviour that is to be rejected is often described as 'theatrical', as in the words of Niceta, writing about psalm singing in the early fifth century:

> One must sing with a manner [*sonus*] and melody befitting holy religion; it must not proclaim theatrical distress but rather exhibit Christian simplicity in its very musical movement; it must not remind one of anything theatrical, but rather create compunction in the listeners.[45]

This rhetorical heritage remains as pertinent in the Carolingian period and is reflected in the longest Carolingian pronouncement on cantors, in the resolutions of the 816 Council of Aachen, which begins:

> For cantors the greatest care should be taken, lest they dishonour the gift conferred on them from heaven through sins, but rather adorn it with humility, chastity and sobriety, and other ornaments of saintly virtues.[46]

For all that singers should not exaggerate affect, the value of music as a means to reach the hearts of those who listen was never underestimated; this is another aspect of attitudes to music in the liturgy which can be followed through early Christian writings into the early Middle Ages. In 'the richest and most eloquent of the patristic encomiums of psalmody',[47] written in the fourth century, John Chrysostom reasons:

> When God saw that the majority of men were slothful, and that they approached spiritual reading with reluctance and submitted to the effort involved without pleasure – wishing to make the task more agreeable and to relieve the sense of laboriousness – he mixed melody with prophecy, so that enticed by the rhythm and melody, all might

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[45] 'sonus etiam uel melodia condecens sanctae relegioni canatur; non quae tragicas difficultates exclamet, sed quae christianam simplicitatem in ipsa etiam modulatione demonstret; non quae aliquid theatrale redoleat, sed quae conpunctionem magis audientibus faciat': Niceta of Remesiana, *De utilitate hymnorum*, ed. Cuthbert H. Turner, as 'Niceta of Remesiana II: Introduction and Text of *De psalmodiae bono*', *The Journal of Theological Studies* 24 (1923), 225–52; XIII, at 239. This translation from James McKinnon, *Music in Early Christian Literature*, Cambridge Studies in the Literature of Music (Cambridge University Press, 1987), 138.

[46] 'Studendum summopere cantoribus est, ne donum sibi divinitus conlatum vitiis fedent, sed potius illud humilitate, castitate et sobriaetate et caeteris sanctarum virtutum ornamentis exornent.' *Concilia* II/I. *Concilia aevi Karolini* I, ed. Albert Werminghoff, MGH LL (Hanover and Leipzig: Hahn, 1906), no. 39, Ch. CXXXVII, at 414. For a translation (not used here), see *The Chrodegang Rules. The Rules for the Common Life of the Secular Clergy from the Eighth and Ninth Centuries. Critical Texts and Commentary*, ed. Jerome Bertram (Aldershot: Ashgate, 2005), 164.

[47] McKinnon, *Music in Early Christian Literature*, 79.

raise sacred hymns to him with great eagerness. For nothing so arouses the soul, gives it wing, sets it free from the earth, releases it from the prison of the body, teaches it to love wisdom, and to condemn all the things of this life, as concordant melody and sacred song composed in rhythm.[48]

While there is no evidence that this particular text was available in Latin in the early Middle Ages, it is representative of a body of writing and is already reflected in Carolingian thought in the continuation of the 816 Council of Aachen resolution on cantors:[49]

the melody of these [cantors] should arouse the souls of the people surrounding them to the memory and love of things celestial not only through the sublimity of the words, but also through the sweetness of sounds which they sing.[50]

And at this point in the 816 Aachen Council statement on cantors, an important Carolingian view of music as the carrier of text becomes tangible. For the luxury of harmonious musical sound was tolerated, despite its potential to mislead, because of its ability to open the hearts of listeners so that they might hear the word of God in those sublime texts. That point is reinforced over and over in this 816 statement:

Let them perform the sounds of the words clearly and elegantly . . . For the psalms should be recited in church not hurriedly and in overly complicated and unclear pitches, but with plain and distinct pitches and with compunction of heart, so that the minds of those reciting the psalms will be calmed through the sweetness [of chant] and the ears of those hearing will be nourished through the pronunciation; for, although in other liturgical offices the sounds of the chants should be expressed with an exalted voice, nevertheless in the recitation of psalms this kind of voice should be avoided.[51]

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[48] This translation from McKinnon, *Music in Early Christian Literature*, 80; based on John Chrysostom, *Patrologiae cursus completus, series graeca*, vol. 55, ed. J. P. Migne (Paris: Garnier, 1862), 156.

[49] See also Hrabanus Maurus, *De institutione clericorum*, ed. Detlev Zimpel, 2 vols., Fontes Christiani 61 (Turnhout: Brepols, 2006), I.11 (pp. 164–7): this work was finished in 819.

[50] 'quorum melodia animos populi circumstantis ad memoriam amoremque caelestium non solum sublimitate verborum, sed etiam suavitate sonorum, quae dicuntur, erigat'. *Concilia Aevi Karolini* I, ed. Werminghoff, no. 39, CXXXVII, at 414.

[51] 'Sonum etiam vocalium litterarum bene atque ornate perstrepant . . . Psalmi namque in ecclesia non cursim et excelsis atque inordinatis seu intemperatis vocibus, sed planae ac dilucidae et cum conpunctione cordis recitentur, ut et recitantium mens illorum dulcedine pascatur et audientium aures illorum pronuntiatione demulceantur, quoniam, quamvis cantilenae sonus in aliis officiis excelsa soleat edi voce, in recitandis tamen psalmis huiuscemodi vitanda est vox.' *Concilia Aevi Karolini* I, ed. Werminghoff, no. 39, CXXXVII, at 414.

As one of the most thorough Carolingian discussions of monastic and canonical rules, with the important consequence of widespread adoption of the Benedictine Rule in Francia, the Aachen Council of 816 represents key Carolingian viewpoints. With the support of the emperor, Louis the Pious, discussions were held at the imperial palace under the direction of Benedict of Aniane; the text of the resolutions agreed circulated in numerous copies. It is not difficult to argue that the need for clarity in the performance of ecclesiastical chant – since music took its place in the liturgy as a medium for the delivery of scriptural texts – was centrally promulgated and likely to represent widely held views.

If it was important that listeners 'be instructed' by the 'wisdom' of those who read and chant in church,[52] then the texts sung in ecclesiastical chant must themselves be appropriate to the occasion. That sung texts were as much the focus of concern for *correctio* as any other text enunciated in the liturgy is made clear in a series of Carolingian writings of the first half of the ninth century. Helisachar, chancellor of Louis the Pious, addressed a letter to Bishop Nibridius of Narbonne concerning the texts of the office responsories;[53] this was probably written between 819 and 822. Helisachar's attempts to bring order to these responsory texts were as nothing compared to the vehemence with which Agobard, Bishop of Lyon (816–35), expressed himself:

> For this reason, we have also corrected in large part the antiphoner for our men, having removed those things which seemed superfluous, or capricious, or mendacious, or blasphemous … within the house of God, to whose care we have been entrusted, we can offer this, not presuming anything according to our own opinion, but following the authority of sacred Scripture, and the sanction of sacred laws, and the institutions and examples of the catholic fathers.[54]

Convinced that nothing that was not directly drawn from scripture – not even a paraphrase – should be admitted into chant, Agobard's long prologue ended by setting the antiphoner, as

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[52] *Epistola de litteris colendis*: see above, p. 343.

[53] MGH EP 5, Epistolae Karolini Aevi 3 (Berlin: Weidman, 1899), 307–9. On this letter see Michel Huglo, 'Les remaniements de l'antiphonaire Grégorien', in *Culto cristiano e politica imperiale carolingia: Atti del XVIII Convegno del Centro di studi sulla spiritualità medievale (Todi, 9–12 ottobre 1977)*, Convegni del Centro di studi sulla spiritualità medievale, Università degli studi di Perugia 19 (Todi: Accademia Tudertina, 1979), 89–120; rep. in *idem, Les Sources du plain-chant et de la musique médiévale* (Aldershot: Ashgate, 2004), Ch. XI, at 97; on this letter, see also Kenneth Levy, 'Abbot Helisachar's Antiphoner', in *JAMS* 48 (1995), 171–86, repr. in *idem, Gregorian Chant*, 178–86.

[54] 'Hac de causa et antiphonarium pro uiribus nostris magna ex parte correximus, amputatis his, quae uel superflua, uel leuia, uel mendatia aut blasphema uidebantur . . . in domo Dei, cuius nobis cura commissa est, quod possumus offerentes, nec de sensu nostro aliquid praesumentes, sed Scripturae sanctae auctoritatem et sacrorum canonum sanctionem, catholicorumque patrum instituta et exempla sectantes.' '*De antiphonario ad cantores ecclesiae Lugdunensis*', in *Agobardi Lugdunensis opera omnia*, ed. L. van Acker, CCCM 52 (1981), 335–51, at III, 339.

the third official book of the liturgy, alongside the sacramentary and book of readings, and thus subject to the same regulations:

> Therefore, through the aid of God's grace, with all devotion of piety, it should be pursued and observed that, just as for the celebration of the sacred rites of masses, the Church has a book of the mysteries compiled with the purest of faith and fitting brevity, and has a book of lections collected from divine books with appropriate rationale, so also we should have this third official book, that is an antiphoner, expunged of all human inventions and falsehoods, and most adequately ordered through the whole cycle of the year with the most pure words of holy scripture . . . one and the same form of prayers, form of readings, and form of ecclesiastical chants should be guarded by us, which [form] – imbibed readily by adolescents of good intelligence – renders them both sufficiently and deeply capable for the singing of divine praises, and does not impede them from more useful and spiritual pursuits.[55]

Agobard's letter about the antiphoner, intended to be read throughout the diocese of Lyon, was composed between 835 and 839.[56] This had been written in reaction to the *De ordine antiphonarii* of Amalarius, and had a quite different flavour. Where Agobard had simply compared chant texts with their scriptural model, Amalarius of Metz approached his mission through study of texts sung in Rome, as well as in Metz. Deeply interested in allegorical meaning, his main concern for chant books was that chant should be performed not according to arbitrary choices made by cantors but in an order that made sense.[57] Finally, mention should be made of Gottschalk of Orbais, whose brief grammatical study of chant texts was probably composed while he was imprisoned on the orders of Hincmar, Bishop of Reims, at the abbey of Hautvilliers,

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[55] 'Quapropter, auxiliante Dei gratia, omni studio pietatis instandum atque observandum est, ut, sicut ad caelebranda missarum sollemnia habet Ecclesia librum mysteriorum fide purissima et concinna breuitate congestum, habet et librum lectionum ex diuinis libris congrua ratione collectum, ita etiam et hunc tertium officialem libellum, id est antiphonarium, habeamus omnibus humanis figmentis et mendaciis expurgatum, et per totum anni circulum ex purissimis sanctae Scripturae uerbis sufficientissime ordinatum . . . una a nobis atque eadem custodiatur forma orationum, forma lectionum et forma ecclesiasticarum modulationum, quae a boni ingenii adulescentibus quam celerrime imbibita, eos et diuinis laudibus concinendis sufficienter et grauiter idoneos reddat, et a potioribus ac spiritalibus studiis non impediat' (*Ibid.*, XIX, 351).

[56] On Agobard's reasons for composing this prologue, see Egon Boshof, *Erzbischof Agobard von Lyon. Leben und Werk*, Kölner historische Abhandlungen 17 (Cologne and Vienna: Böhlau, 1969), 273ff.

[57] See especially the *Prologus de ordine antiphonarii*, in *Amalarii episcopi opera liturgica omnia*, ed. Hanssens, I, 361–3.

between 849 and his death in 868.[58] Leaving Gottschalk aside – since his notes on chant did not circulate far beyond his environs – it is evident that the writings of these Carolingian liturgists represent the tangible consequences of widely felt concerns about the formulation and ordering of ecclesiastical chant. While none of their efforts met with wholesale success, it is possible to see traces of the work of these reformers in later chant books.[59]

From Agobard to Gottschalk we receive the views of writers competent to review texts: nothing comparable survives for the melodic delivery of chant. Following the precepts of a tonary, such as that represented on the last pages of a manuscript made between 795 and 800,[60] might have provided a kind of equivalent to the grammatical control of words in text. By grouping melodies according to categories called *toni*, the tonary provided some level of regulation of tonal behaviour; in addition, this way of gathering melodies produced a new way of organizing them. Rather than being set in the memory following the order of their performance through the church year, the melodies could be grouped into distinct categories according to their similarity with each other, thereby rendering it possible to think about melodies in a new way. That in itself would have had certain implications for their treatment, likely to favour correspondence in their delivery, more than differentiation. The incipient theory of 'tones' or 'modes' represented by the tonary thus allowed Carolingian cantors to 'gain control over a vast repertoire of chant'.[61] Beyond this, we know little – in any direct fashion at least – of how the *correctio* mentality was actually applied to the singing of ecclesiastical chant, only that it is unlikely that it did not have a strong impact.

II.3 WRITING MUSIC

Why in this society so intensely engaged with the manifestations of script and regulation of text were ways of recording music in writing invented? Could it have been the need for greater control of the singing of Gregorian chant, as argued for by Levy,[62] or the wish to record music that sat outside the norms of that Roman-Frankish chant repertory (such as sequence melodies) and passages sung by the celebrant rather than the cantor and choir, as argued for by Corbin?[63] Or did some entrepreneurial scribe have a day of enlightened thinking, investigating how music might be written, and then pass on the results to others

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[58] *Oeuvres théologiques et grammaticales de Godescalc d'Orbais*, ed. D. Cyrille Lambot, Spicilegium sacrum Lovaniense 20 (Louvain, 1945), 427ff. The main argument for this dating is the presence in Gottschalk's text of chants from the office for St Remigius, while it is known that Hincmar was working on a life of Remigius during the 860s. See Matthew Bryan Gillis, *Gottschalk of Orbais: A Study of Power and Spirituality in a Ninth-Century Life*, unpublished PhD dissertation (University of Virginia, 2009), 341ff.

[59] For examples, see Huglo, 'Les remaniements'.

[60] BNF lat. 13159: on this manuscript see p. 293.

[61] Atkinson, *Critical Nexus*, 86. See also Huglo, 'Un tonaire', 224–33.

[62] Levy, 'Charlemagne's Archetype', and 'On the Origin of Neumes'.

[63] Corbin, *La Notation musicale neumatique*, 510–11.

who played with his results in manifold ways? Answers to this 'why' question are unlikely to be forthcoming: Treitler's claim that the 'fundamentally different types and purposes' of early examples of notation owe their existence to the 'reflection into the musical realm of the new scriptural orientation in the culture' is fully supported by the results of the new review of extant ninth-century examples of musical notation carried out in Part I.[64] It is simply not possible, in view of the diversity of uses of musical writing in the ninth century, to link its existence with specific aims. More significantly, the number of examples of musical notation, written in different kinds of script, testifies to considerable interest across the Carolingian empire in possibilities for writing music. The richness of technically diverse examples written at one institution – the abbey of Sankt Gallen – in a period of less than fifty years is but one demonstration of mastery and exploitation of music writing. In comprehensive fashion, the emergence of ways of representing music in writing in the ninth century sits very comfortably within what we know about Carolingian interest in literacy, not only as a direct basis for spiritual health and access to God but also as support for the collection of knowledge and its communication between people.

Indeed, what could be achieved through these early examples of music writing is surely of considerably more interest – in view of the later history of musical notations – than the reason for the first step of invention having been taken. If we set aside notations in the *Musica* and *Scolica enchiriadis* theoretical treatises, at no point in the ninth century was music writing intended to be self-sufficient in relation to the intervallic structure of a melody. In a variety of ways, all notations were dependent on recall and intentionally designed to support that recall. In this notations written in the ninth century contrast with Western notations written since the eleventh century: the distorted reading of early examples that has resulted from projection of ways of reading the later notations onto the earlier has led to considerable misunderstanding, including the conception of early medieval music scripts as in some way primitive, their creators not having yet found out how to represent intervallic structures fully. That view can be quickly dismissed, on the grounds that the theory treatises show perfectly clear procedures for showing precise intervallic relations, syllable by syllable, only this was not what early practical notations were seeking to achieve.

It is in the reading of an early medieval notation, neume by neume, that the difference from a later notation can best be appreciated. Passages of notation in a scrap from a larger collection of antiphons written in the second quarter of the ninth century – the earliest extant example of notated Gregorian chant – advise the reader to move up or down or stay at the same pitch level (Figure 35 and Example 75). For the syllables from *in* to *organo*, the place of the neumes in the space above the text can be read in clear intervallic steps (from *in*, up, up, down, down, stay at lower level of two rising notes, stay); but as soon as the range of the

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[64] Treitler, 'Reading and Singing', 372.
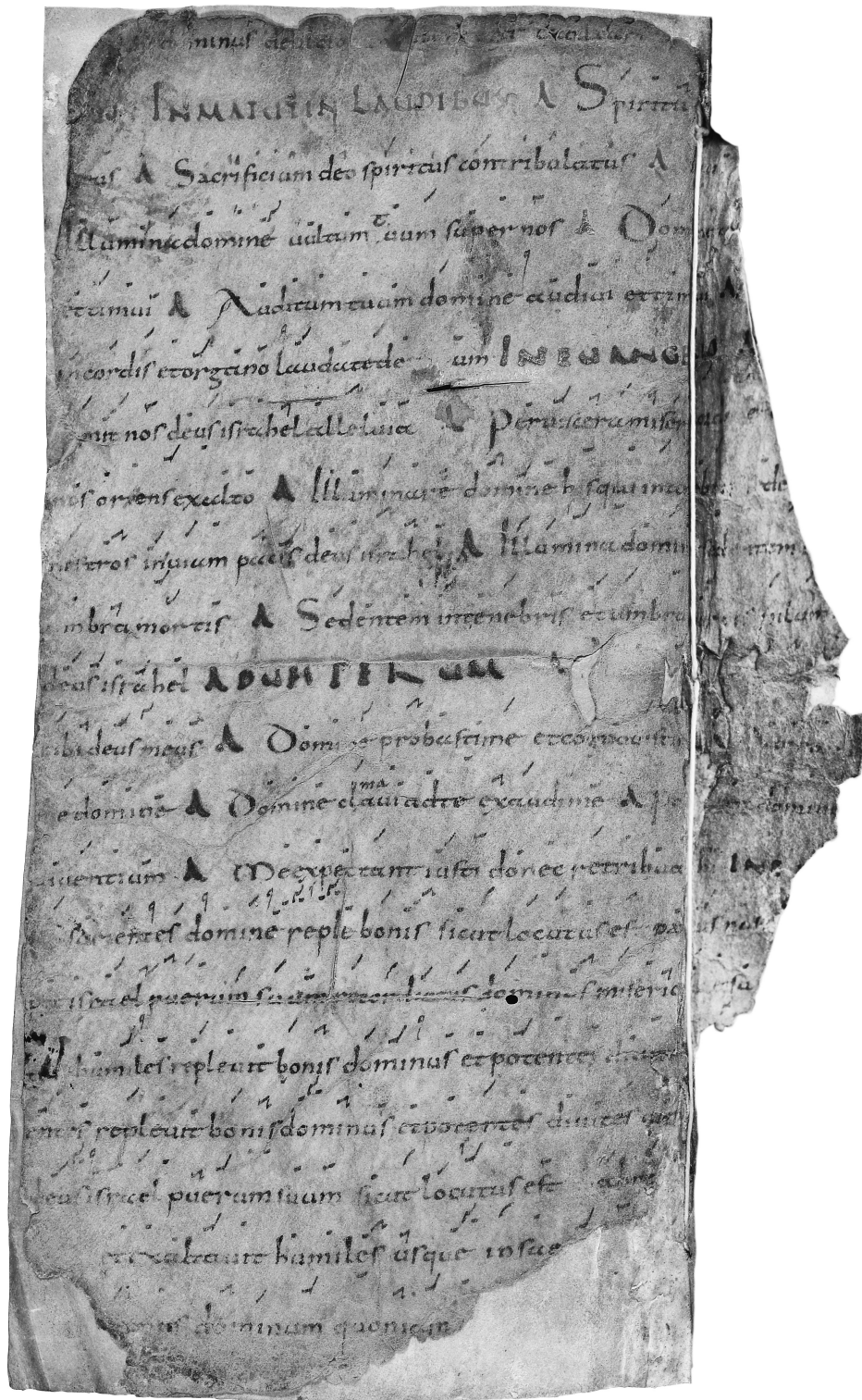
Figure 35 Oxford, Bodleian Library ms Auct. F.4.26, fol. 1 (section).

Example 75 Passages from the Antiphons *In timpano* and *Per uiscera* (Oxford Auct F.4.26 and BNF lat. 12044 fol. 36v).

In timpano et co-ro in cordis et or- gano lau da te   deum

Per uis-ce- ra mi- se- ri-cor-diae
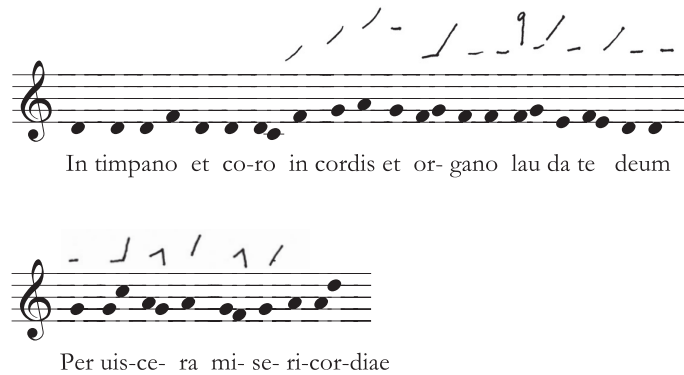
melody moves outside of the tessitura composed of two steps (here two whole tones), the neumes cannot be read this way. To follow the neumes for *laudate deum*, the reader must know that the melody is gradually moving down and that *laudate* is sung a tone below the beginning of *laudate*, and both syllables of *deum* a tone below that again. In the neumes for *Per uiscera misericordiae* the eye can read two rising notes on *uiscera*, but not the large interval of a fourth, nor the starting point for the two falling notes on *uiscera*, a minor third below the high point reached on the preceding syllable: that kind of information was not recorded. What the neumes were designed for was the accessing of that information in the memory of the reader. The suggestiveness of placing, combined with the information encoded into the signs about numbers of notes and the occasional guide (such as 'q' for *equaliter* on the line above) all fed into the process of recall. Therefore, as a way of using writing, this process remained focused on recall from memory as the principal mechanism for delivery of specific melodies. In relation to intervallic structure of melodies, that balance between the written record and recall would not change until the introduction in the eleventh century – in various forms in different parts of Latin Europe – of pitch-specific notations. Apart from the inflection of particular notes (above all **B** in two ways), these later notations were self-sufficient in terms of intervals, encapsulating the entirety of this aspect of musical sound.

The notation in Example 75 was written in the script known as Breton, developed mainly from Palaeofrankish script. The other main script type, the Frankish, was no more nor less dependent on memory than the Palaeofrankish: it simply used written signs to prompt recall in a different way. Yet the distinction in procedure from Palaeofrankish to Frankish may have depended on the social context in which the script was designed and used. By encoding melodic movement, upwards or downwards, into signs themselves, rather than into the way they were placed, the inventor of the Frankish script had taken an important step towards rendering neumatic scripts more readable by convention than the Palaeofrankish, which was relatively 'iconic' and in which an upward stroke meant 'move up', a downward stroke

meant 'move down' and a point meant 'sing a single note'. To read the Frankish script properly, a singer needed to be aware of the relation between signs and sounds: a certain amount of learning was involved. If this script was less immediately comprehensible to an untrained reader (but easily readable by a trained reader), we need to recognize a change in (or refinement of) the social frame of reference for music script: without tying music writing to any specific social purpose (such as recording new songs, singing Gregorian chant, recording Gregorian chant, or recording individualized ways of singing songs or chants), it could nevertheless be argued that this second script type was made to be read by more specialized practitioners – cantors or other persons familiar with whichever melodic repertory was in question.

Without prejudice as to the direction of borrowing, it has been established that some ways of writing were transferred from one script family to the other; there must therefore be some historical relation between Palaeofrankish and Frankish families, as opposed to the two script types being independently created. Even without making an argument based on the precise forms of basic neumes, the possibility of independent invention should be set aside: the main graphic elements of the two music script families are much too similar to sanction the argument that one was designed entirely without knowledge of the other. One fundamental contrast remains, however: the relation of each of the script types to musical sound, in which the Palaeofrankish script sits apart from all the others. This is the script that has a sign that could not be included with the Frankish neumes, since there would be immediate confusion; this is the script that relies on a way of reading written signs as representative of movement, not individual notes, as in every other extant type of neumatic script; and this is the script that attempts to represent in written signs the behaviour of the modulating voice, rather than drawing two separate sound patterns, that of the words and that of an abstracted melody.

Which came first, Palaeofrankish or Frankish? If one of the two was invented with knowledge of the other and in reaction to it, there can be no question about the direction of change. It would surely not be possible for anyone to invent a music script from the grammatical basis of representing the modulation of sound *after* the musically rationalized Frankish system was already in place: this is not a question of some degree of inferiority in the Palaeofrankish script but rather of its suitability for the kinds of uses to which music writing began to be put. In a Carolingian situation marked by attentiveness to the manifold potentials of writing, once a script had been developed to the extent that it could record melismatic chant, the main users of music notations must have been trained cantors. Again, in this Carolingian situation, with its concern for the intellectual understanding of everyday practices, especially the liturgy, such musicians would have had, at the very least, an extensive knowledge of modal melody, and some will also have been familiar with music-theory texts. To such musicians, the writing of musical sound in service of their singing would surely have had to give first place to the notes between which their voices should move, since it was the good regulation of the intervals between those notes that would bring beauty to their

singing, the 'control of sweet-sounding melody'.[65] The invention of two ways of writing music in the early ninth century can thus be understood as the result of many factors, prominent among them new impulses for the use of script and new (or re-discovered) ways of comprehending musical sound.

11.4 exploration, experimentation, exploitation

The first phase in the invention of music writing, the creation of the Palaeofrankish script, had used a writing model taken from the intellectual discipline of grammar. The second phase, the design of the Frankish script, with its rejection of several aspects of Palaeofrankish practice, certainly indicates the involvement of professionals, musicians who understood the newest theoretical thinking and who were in a position to grasp the practicalities of what was needed from music writing and what was possible.

This forces us to return to consideration of why this Frankish script was made as it was. I am hardly going to argue that music script was made more difficult to read on purpose: such a choice would be quite out of line with Carolingian attitudes to the value of writing, including concern for the visual aspects of the page and the arrangement of written material to support clarity in its delivery. The answer must be found elsewhere. Since the design of any script is fundamentally determined by being a product of social practice within a particular cultural setting, it is more likely that the ways in which music writing was being used were modified or refined. Frankish notations indicated the numbers of notes sung to each syllable of the text: they belonged to the new world of rationalized musical thinking that emerged in the early years of the ninth century (if not already by 800), rather than to grammarians' attempts to stretch a system conceived for the speaking voice to cover ever more aspects of delivery. Was it because Frankish notations took up less space and could be more easily written into chant books that had not been prepared for musical notations that they were first designed in this way? Or because they were primarily designed to notate the repertory of Gregorian chant, thus a well-known set of melodies, rather than new compositions? Or, as I would most like to argue, because once the possibility of writing music on parchment had been shown to be possible, others hurried on to design scripts for music that were appropriate to their own specific (and different) purposes?

Interest in designing new music scripts and developing the potential of script models is apparent in the number of different scripts that were certainly created in the ninth century: the only neumatic script that cannot be traced back to this period is the Beneventan. Some of the designer-scribes started out from the Palaeofrankish model and retained many of its

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[65] From the opening of the late ninth-century *Scolica Enchiriadis*: see above, p. 301.

principles: the scripts produced in this way include the Lotharingian, Breton, Nonantolan and Aquitanian scripts. But at least one early ninth-century scribe set most of the Palaeofrankish principles aside and started again, producing the Frankish script, which in turn became the model for a number of regionally identifiable variations. All those who developed new types of music script were engaged in a similar enterprise, advancing the potential offered by script to record elements of musical sound. That it was possible to develop both the Palaeofrankish and the Frankish music scripts in numerous ways, and by 900 to be able to write nuance of many kinds, is effectively demonstrated by the notations written in the Laon 239 Gradual and the CSG 359 Cantatorium, the two manuscripts that have been the basis in the modern age of so much study of Gregorian melody and its delivery. The work of the scribes of these two manuscripts sits at the end of a century of invention and experimentation.

In the surviving examples of ninth-century notations, the fact of mixing techniques taken from one into another is readily apparent: all our theories of development need to recognize the ability of any individual scribe to read another scribe's work and to adopt something from it. It is, after all, the chaos of layers of innovation apparent in the more established schools of script evident in extant late ninth- and tenth-century examples that limits our ability to see sharply into the process of development of the individual scripts. In this matter, the juxtaposition of music scripts to text scripts in this period is salutary, when the development into different scripts of the one is compared to the increasing convergence of the other. From the late eighth century onwards, more and more institutions adopted Caroline minuscule as their main text script, while from at least as early as the 920s forms of music script became increasingly differentiated. Even if the regional variations in ways of writing Frankish music script can be considered analogous to regional schools of text script, both exemplifications of the concept of 'writing provinces',[66] the other quite distinct music scripts will not fit into that model. It is an important distinction, forcing us to confront the reality of phases of development in music writing, not only the fact of different kinds of script but also the evidence of considerable development of individual script types, the different recording possibilities offered by different scripts and the ability of scribes to use a specific script in quite different ways.

By 900, two distinct fashions for writing sounds on parchment – the ancient Greek letters and the younger neumatic scripts – were recognized by theorists of music. When Hucbald of St Amand was composing a treatise on music theory, the existence of different regional musical scripts was altogether familiar to him: he described the written signs 'that usage has now handed down, and which for the sake of a variety of places are nonetheless delineated by various shapes' as assisting

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[66] See Bischoff, 'Panorama', *MAS* III, 5–6.

recall,[67] and also as 'not [to] be considered unnecessary', since they could indicate speed, texture and articulation of the melody.[68] Yet he was highly critical of their lack of precise intervallic information, claiming that they led the reader 'with uncertain step'.[69] His own proposition was to combine neumatic script with the letter system inherited from ancient Rome:

> Therefore if these same little letters, which we take as musical notes, are placed above or around these [traditional] ones pitch by pitch, it will make it clear to see a web of the truth perfectly and without any error, since these [letters] indicate how much higher or lower the voice should be borne; those [customary notes] fix more securely in the mind the above-mentioned nuances without which correct melody is not woven.[70]

This dual notation model was adopted in the tonary and mass antiphoner Montpellier H.159, made in the early eleventh century. No earlier examples are known, and the association of H.159 with the reforms of William of Volpiano provide a special context for such comprehensive and precise notational expression:[71] this was a solution for a didactic or theoretical situation. With no other reception in the domain of manuscripts associated with musical practice, it is clear that Hucbald's proposal fell on deaf ears: evidently the users of those books could get along perfectly well without such exact guidance. Musical notations in the form of dots, straight and curved lines and extended forms composed from these elements, written in the open space above a text, had already become and would remain for most of the tenth century the principal practical way of representing musical sound in writing. Referred to by Hucbald using the Latin *nota*, these musical signs also came to be known as 'neumes': it is in a text probably copied only a few years after Hucbald's *De harmonica institutione* had been composed that the earliest use of '*neuma*' can be found. A short theoretical passage beginning

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[67] 'Quod his notis quas nunc usus tradidit quaeque pro locorum uarietate diuersis nichilominus deformantur figuris, quamuis ad aliquid prosint remunerationis subsidium.' Hucbald, *De harmonica institutione*, ed. Yves Chartier, in *L'Œuvre musicale d'Hucbald de Saint-Amand. Les compositions et le traité de musique*, Cahiers d'études médiévales, spécial 5 (Montreal: Bellarmin, 1995), 136–212, at 194 (ch. 44).

[68] 'Hae tamen consuetudinariae notae non omnino habentur non necessariae, quippe cum et ad tarditatem seu celeritatem cantilenae, et ubi tremulam sonus contineat uocem, uel qualiter ipsi soni iungantur in unum uel distinguantur ab invicem, ubi quoque claudantur inferius vel superius pro ratione quarumdam litterarum, quorum nihil omnino hae artificiales notae ualent ostendere, ad modum censentur proficuae.' *Ibid.*, 196 (ch. 46).

[69] 'Incerto enim semper uidentem ducunt uestigio.' *Ibid.*, 194 (ch. 44).

[70] 'Quapropter si super aut circa has per singulos ptongos eaedem literulae, quas pro notis musicis accipimus, apponantur, perfecte ac sine ullo errore indaginem ueritatis liquebit inspicere, cum hae quanto elatius quantoue pressius uox quaeque feratur insinuent: illae uero supradictas uarietates, sine quibus rata non texitur cantilena, menti certius figant.' *Ibid.*, 196 (ch. 46).

[71] On this notation, see Alma Colk Santosuosso, *Letter Notations in the Middle Ages*, Musicological Studies 52 (Ottawa: Institute of Medieval Music, 1989), and Phillips, 'Notationen und Notationslehren', 565–72.

'Quid est cantus?' appears between passages about *computus* in Vatican BAV Pal. lat. 235 (fol. 38v–39r): this part of what was originally an Insular book was copied somewhere in northern Germany (possibly at Gandersheim) shortly after 900.[72] Here it is stated:

> De accentibus toni oritur nota quae dicitur neuma.
>
> *From the accents of tone is borne '*nota*', which is called 'neume'.*[73]

Now the bridge from grammarians' accents to written signs for sound called 'neumes' was complete.

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[72] On the tenth-century hands in this manuscript, see Hoffmann, *Schreibschulen*, 27.

[73] The text was first edited by Peter Wagner, 'Un piccolo trattato sul canto ecclesiastico in un manuscritto del secolo x–xi', *RasG* 3 (1904), 482–4; see now also Charles Atkinson, 'The Anonymous Vaticanus and the Palaeofrankish Script', *Cantus Planus, Study Group of the International Musicological Society, Papers Read at the 16th Meeting, Vienna, Austria, 2011* (Vienna: Österreichischen Akademie der Wissenschaften, 2012), 20–6. On the use of '*neuma*' in relation to writing, see the *LmL* entry, at 681; on the use of '*nota*' in relation to writing, see the *LmL* entry, at 698.

*Manuscripts with notations written
in the ninth century*

MS	Notated content	Musical Script	Main ms date	Added material date	*Katalog* number	*Katalog* location
Admont SB 285 fol. 115r	Melismas without text	F (E)	s.ix ½	nu	10	Salzburg area
Autun BM S3(4) fols. 25r–v, 78r, 198r–v	Gospel readings	F (W)	s.viii	nu	CLA 717	Flavigny?
Autun BM S28 fol. 64r	*Alleluia V. Ego sum*	F (W)	s.vii	s.ix ¾	158a	S France, then Autun
Autun BM S28 fols. 22v, 50r, 63v, 64r, 87r, 94v	Chants and sequences	F (W)	s.vii	s.ix *ex*/s.x *in*	158a	S France, then Autun
Berlin SB (now Krakow BJ) lat. qu. 687 fol. 85v	*Versus Sublime festum*	L	s.ix ¾	s.ix ⁴⁄₄	392	France (Soissons)
Berlin SB Preussischer Kulturbesitz theol. lat. fol. 58 fol. 1v	Three Boethius *versus*	F (E)	s.ix ½	s.ix *ex*	447	St Omer
Berlin SB Preussischer Kulturbesitz theol. lat. fol. 366 fol. 1r	Cue for *versus Aeterna christi munera*	PF	s.ix ¼	nu	463	Werden
Berlin SB Preussischer Kulturbesitz theol. lat. fol. 366 fols. 17v, 18r, 93v, 94r, 95r–v	Melismas, Offertory chant	PF	s.ix ¼	s.ix *ex*/x *in*	463	Werden
Berlin SB (now Krakow BJ) theol. lat. qu. 124 fols. II-III	Missal (two bifolios)	F (I)	s. ix/x or x *in*		472	Italy?
Bern BB 36 fol. 139v	*Versus Sum noctis*	F (W)	s.ix ¾	s.ix	493	prob. Auxerre or Fleury
Bern BB 338 fol. 11r	Pen trial over 'De ortografia'	F (W)	s.ix ⁴⁄₄	nu	577	Fleury
Bern BB 394 fols. 1v, 6v, 10r, 12r, 18v, 24r, 32r, 43r	*Versus Mecum Timavi, Versus* (Prudentius)	F (W)	s.ix/x	s.ix/x–s.x ¼	590	W France
Bern BB 455 fols. 13v, 32r–v, 33r–v, 34v–35r, 37r	*Versus*	F (W)	s.ix ²⁄₃	s.ix ³⁄₃	599	France (Parisian region?)
Bern BB 455 fols. 10v, 13r, 32r	*Versus Ihesu redemptor omnium, Nocte surgentes, O crucifer bone*	PF	s.ix ²⁄₃	nu	599	France (Parisian region?)
Bern BB 455 fols. 20r, 21r, 22r, 26r–v, 27r, 29r–v, 31v, 41r	*Versus*	L	s.ix ²⁄₃	s.ix *ex*/s.x *in*	599	France (Laon)
Cambridge CCC 272 fol. 174v	Office responsory	L	883/884	cont.	817	Reims
Düsseldorf UB D1 fols. 185v–186r	Antiphons *Suscipiat te, Chorus angelorum*	PF	868–872	s.ix *ex*	1069	Belgium/NE France
Einsiedeln SB 302 p. 73	*Versus Si quantas rapidis*	F (E)	s.ix ²⁄₃	nu	1128	SW Germany
Florence BML Aedil.121 fol. 97v	*Exultet*	F (I)	s.ix ³⁄₃	nu	1208	N Italy
Fulda HL Aa 11 fol. 223r–v	Luke genealogy	F (E)	s.ix ¾	nu	1319	Constance
Graz UB 748 front and back pastedowns	Gradual (two folios)	F (W)	s.ix/x or s.x *in*		1457	France
Heidelberg UB 3953.1	Missal (two folios)	F (I)	s.ix ²⁄₂		1509	N Italy
Laon BM 9 back endleaf	Gradual (two folios)	L	s.ix ⁴⁄₄			
Laon BM 121 front endleaf	Gradual (two folios)	L	s.ix ³⁄₃		2078	NE France (Laon?)
Laon BM 121 fol. 65v	Melisma without text	L	s.ix ³⁄₃	nu	2079	NE France?
Laon BM 239	Gradual	L	s.ix ⁴⁄₄		2094	NE France
Laon BM 266 front endleaf	Gradual (two folios)	L	s.ix ⁴⁄₄		2097	NE France (Laon?)
Leiden BRU BPL 25 fols. 1, 42, 43	Antiphoner (three folios)	B	s.ix ¾		2135	perhaps NW France
Leiden BRU Burm. Q.3 fols. 20v, 21r	*Versus* (Prudentius)	L	s.ix ²⁄₄	nu	2177	St Denis
Leipzig UB 1609 fol. 1	Antiphoner (one folio)	F (W)	s.ix/x			
London BL Add. 16605 fols. 1v–3r	*Exultet*	L	s.ix ¾	nu	2367	Stavelot
Mainz BB 1 fols. 47v–48r	Preface	F (E)	s.ix ⁴⁄₄	nu	2666	prob. Mainz
Milan Ambros. B 48 sup. fols. 142–3	Antiphoner-Gradual (two folios)	F (I)	s. ix/x		2625	France?
Milan Ambros. D 84 inf.	Missal	F (I)	s. ix/x		2616	Bobbio
Modena O.I.4 fol. 154v	*Versus*	F (I)	s. ix *ex*	s. ix *ex*	2793	Modena
Munich BSB cgm 6943 endleaves & Vienna ÖNB ser. nova 3645	Antiphoner (two folios and four folios)	F (E)	s.ix ⁴⁄₄		2918	S Germany
Munich BSB clm 4556 pp. 125–6	Marginal entry (with text)	F (E)	s.ix ½	s.ix or x	2971	prob. S Germany
Munich BSB clm 6431	*Officium mortuorum*	F (E)	s.ix/x		3086	Swabia
Munich BSB clm 9543 fol. 199v	Prosula *Psalle modulamina*	F (E)	s.ix ²⁄₄	s.ix ²⁄₄	3108	Regensburg
Munich BSB clm 14735 fols. 9–28	Gradual (twenty folios, palimpsested)	F (E)	s.ix/x		3254	prob. France
Munich BSB clm 18765 fols. 16r, 20v, 23v–24r	*Versus* (Boethius)	F (E)	s.ix *med*	nu	3311	W Germany?
Munich BSB clm 18765 fol. 75r	Pen-trial	F (E)	s.ix *ex*	s.ix *ex*	3311	W Germany?
Munich BSB clm 19408 fol. 25v	Benedictine Rule ch. 20	F (E)	s.viii/ix	nu	CLA 1322	Tegernsee
Munich BSB clm 19439 fols. 23v, 26r, 53v, 60v	Pen-trials in a glossary	F (E)	s.ix ¾	nu	3323	prob. S Germany
Munich BSB clm 29308/1	Notker sequences (three folios)	F (E)	s.ix/x		3416	S Germany
Munich BSB clm 29316/1	Antiphoner (one folio)	F (E)	s.ix/x or s.x *in*		3421	prob. Germany
Munich UB 2°Cod. ms. 34 fol. 1r	Pen-trials	F (W)	s.ix *med*	nu	3521	Lyon

(cont.)

MS	Notated content	Musical Script	Main ms date	Added material date	*Katalog* number	*Katalog* location
Naples BN IV G 68 fols. 5r, 6v, 12v–13r, 14v–15r, 16v–17r, 19r, 24v, 27v, 29v, 33v, 37r, 39r, 41v, 42r–v, 43r, 44r, 69r, 74v, 76v	*Versus* (Boethius)	F (E)	s.ix ⁴⁄₄	nu	3574	St Gallen
Naples BN IV G 68 fols. 207r–v, 231v–232r	*Versus*	F (E)	s.ix *ex*/x *in*	s.ix *ex*/x *in*	3574	St Gallen
New York Public Library 115 fol. 48r–v	Gospel passage	B	s.ix ³⁄₃	s.ix ³⁄₃	3625	Landévennec
Novara BC s.n. single folio	Canon and Proper preface	F (I)	s.ix ²⁄₂	nu	3636	N Italy
Orléans 169, front endleaf recto	Melisma without text (?sequence melody)	F (W)	s.ix ³⁄₄	nu	3710	Loire region
Orléans 221 pp. 1, 212	Melismas without text	B	s.ix *med*	nu	3727	Brittany
Oxford Auct. F.4.26 front endleaf	Antiphoner (one folio)	B	s.ix ²⁄₄		3773	W France
Oxford D'Orville 175 fols. 1–50	Missal (palimpsested fragment)	F (I)	s.ix/x		3793	Italy
Paris Arsenal 227 fols. 202r–204r	*Exultet*	F (W)	s.ix ⁴⁄₄	s.ix/s.x	3915	Central France or Parisian region?
Paris BNF lat. 250 fols. 13v–14r	Gospel reading	F (W)	830–40	nu	3970	Tours
Paris BNF lat. 260 fols. 74r, 79v (not 107r)	Gospels	A	s. viii/ix	nu	3974	Tours
Paris BNF lat. 261 fols. 19v–20r	Matthew genealogy	B	s.ix ³⁄₄	nu	3975	W France
Paris BNF lat. 270 fol. 70v	Luke genealogy	B	s.ix ³⁄₄	nu	3984	N France
Paris BNF lat. 894 fol. 29v	Matthew genealogy	B	s.ix ²⁄₄	nu	3997	N France?
Paris BNF lat. 2291 fols. 12v, 14v, 16r	Cues in chant list, *Doxa*	PF	875–77	s.ix ⁴⁄₄	4157	St Amand
Paris BNF lat. 2291 fol. 1v	Responsory for St Germanus	F (W)	s.ix ³⁄₄	s.ix *ex*	4157	St-Germain-des-Prés
Paris BNF lat. 2373 fol. 1r	Sequence melodies	F (W)	s.ix ³⁄₄	nu	4179	NE France (court?)
Paris BNF lat. 2373 fol. 3r	*Planctus	F (W)	s.ix ³⁄₄	s.ix ²⁄₂	4179	NE France (court?)
Paris BNF lat. 2832 fols. 62r, 68v (not 123v/124r)	*Versus*	F (W)	s.ix *med*-³⁄₄	nu	4240	Lyon or St-Oyan
Paris BNF lat. 4697 fols. 22v, 26v–27r	*Pen-trial, *Tamquam/Fabrice* melismas	B	s.ix ²⁄₂	s.ix *ex*	4326	prob. Clermont-Ferrand
Paris BNF lat. 5325 fols. 137r–142r	Cues in a homily	F (W)	s.ix ²⁄₄	nu	4362	Tours
Paris BNF lat. 7193 fol. 33v–34r	Pen-trials	F (W)	s.ix *in*	s.ix *ex*	4429	in the vicinity of the court
Paris BNF lat. 7501 fol. 155r (lower margin)	Pen-trials in Priscian *Institutiones*	PF	s.ix ³⁄₄	nu	4453	Corbie
Paris BNF lat. 7680 fol. 39r	*Versus Bachifer eia*	B	s.ix ³⁄₃	s.ix *ex*	4495	E France?

Paris BNF lat. 8051 fol. 22v, 56r	*Versus O mihi desertae, Huc adtolle genas*	F (W)	s.ix *med*-¾	nu	4521	Corbie
Paris BNF lat. 8087 fol. 22r	*Versus O nazarene lux*	F (W)	s.ix ⅔	nu	4527	Channel coast
Paris BNF lat. 8093 fols. 17r, 18r–v, 24r–v	*Versus*	F (OH)	s.ix ¼	s.ix ⁴⁄₄	4529	Lyon
Paris BNF lat. 8318 fol. 57r	*Versus Ad celi clara*	L	s.ix *med*	nu	4540	W France (Loire)
Paris BNF lat. 8318 fol. 64r	Cue for *versus Quem terra pontus aethera*	PF	s.ix *med*	nu	4540	W France (Loire)
Paris BNF lat. 8319 fol. 37r	*Versus Gloria laus et honor*	PF	s.ix ²⁄₄	nu	4543	E France
Paris BNF lat. 8670 fols. 4r, 5v, 6r, 10r, 11v, 14v, 109r	*Versus* in Martianus Capella *De nuptiis*	F (W)	s.ix *med*-¾	nu	4554	Corbie
Paris BNF lat. 9430 fol. 267v	Antiphons *dum tondis*	F (W)	s.ix ⁴⁄₄	s.ix ⁴⁄₄	4586	Tours
Paris BNF lat. 9433 fol. 251v	Chant *Requiem domine*	PF	895–900	nu	4587	Echternach
Paris BNF lat. 10314 fol. 120r	*Versus* (Lucan)	F (E)	s.ix ²⁄₄	nu	4629	Lotharingia
Paris BNF lat. 10587	Notker *Liber Ymnorum* (fragment)	F (E)	s.ix/x			[St Gallen]
Paris BNF lat. 13024 fol. 119v	Pen-trials in *Ars grammatici*	F (W)	s.ix ²⁄₄	nu	4859	prob. Corbie
Paris BNF lat. 13377 fols. 54v, 55v	*Versus A solis ortu cardine* and *Felix nimium*	F (W)	s.ix ¼	nu	4905	Corbie?
Paris BNF lat. 13745 fol. 88v	*Versus Praecelsa Germani*	F (W)	circa 865	nu	4930	St-Germain-des-Prés
Paris BNF lat. 18554 fol. 54v	*Versus A solis ortu cardine*	F (W)	s.ix ²⁄₂	nu	5059	St Denis
Paris BNF lat. 18554 fol. 54v	*Versus A solis ortu*	L	s.ix ²⁄₂	nu	5059	St Denis
Paris BNF nal. 1586 fol. 123r	*Versus (in marg.)*	F (W)	s.viii *ex* + s.ix ½	s.ix *med*	5091a	Tours
Paris BNF nal. 1632 fol. 25v	(*in marg.*) 'luciane'	L	s.ix ²⁄₄	s.ix ⁴⁄₄	5109	France
Paris BNF nal. 2199 fols. 14–16	Antiphoner (mass and office) (three folios)	F (OH)	s.ix/x			
Paris Mazarine 1707 fols. 89v–91r	Easter liturgy	B	s.ix ¾		3939	Reims
Paris SG 17 fols. 4r–5r	Matthew genealogy	B	s.ix ³⁄₃	nu	5162	Brittany
Paris SG 223 fols. I, II, 99, 100	Antiphoner (eight folios)	B	s.ix ¾		5166	France
Paris SG 1190 fol. 105r–v	Luke genealogy	F (E)	s.ix ²⁄₄	nu	5170	Mainz
Regensburg BZB Fragm. II.3.1 (*olim* Cim. 2)	Gospels (reading for St Stephen)	F (E)	c.800	nu (ill.)	5230	Regensburg

(cont.)

MS	Notated content	Musical Script	Main ms date	Added material date	*Katalog* number	*Katalog* location
Rome BN Sessor. 38 fol. 56av	Antiphon *Cum autem descendisset*	F (I)	s.ix ²⁄₄	s.ix–x	5322	Nonantola
St Gallen KB Vadiana 317 pp. 26–30	Notker sequences	F (E)	s.ix *med*	s.ix *ex*	5484	St Gallen
St Gallen SB 50 pp. 270, 271, 273	Luke genealogy	F (E)	s.ix ²⁄₂	nu	5536	St Gallen
St Gallen SB 136 pp. 11, 116, 149, 212, 261	*Versus* (Prudentius)	F (E)	s.ix ½	nu	5593	St Gallen
St Gallen SB 196 pp. 76–8, 280	*Versus* (Fortunatus)	F (E)	s.ix ¾	nu	5653	St Gallen
St Gallen SB 348 pp. 367–8	Preface	F (E)	c.800	nu	5736 CLA 937–8	Chur
St Gallen SB 359 pp. 5–6, 24–162	Cantatorium	F (E)	s.ix *ex*		5738	St Gallen
St Gallen SB 390 between pp. 4–5 and 190–1 & St Gallen SB 391 between pp. 4–5	*Versicularium* (four binding strips)	F (E)	s.ix ⁴⁄₄			[St Gallen]
St Gallen SB 397 p. 31	*Exultet*	F (E)	s.ix ¾	s.ix ¾	5741	St Gallen
St Gallen SB 614 p. 48	*Fabrice prosulae*	L	s.ix *med*	s.ix ²⁄₂	5814	Soissons?
St Gallen SB 844 pp. 129–30	*Versus* (Boethius)	F (E)	s.ix ⁴⁄₄	s.ix *ex*	5852	St Gallen
St Gallen SB 1397 pp. 13–16	Antiphoner (two folios)	F (E)	s.ix ¾		5894	SW Germany/ Switzerland
Stuttgart WLB HB VII 13 fols. 99v–100v	Luke genealogy	F (E)	s.ix ²⁄₂	nu	6080	St Amand (then E Francia)
Tours BM 184 (2nd sacramentary) fols. 7r, 11r, 12r–v, 13v, 51v, 52v–53r, 64v, 82r	Prefaces, *Exultet* prayer, chant cues	F (W)	s.ix ⁴⁄₄	nu	4584	[Tours]
Valenciennes BM 72 fols. 16v, 24v, 32v, 40v, 48v, 71v, 79v, 87v, 95v, 103v	Decorated quire signatures	L	s.ix/x	s.ix/x	6333	Reims region
Valenciennes BM 148 fols. 71v, 72r, 84r	Passages in Aurelian *De musica disciplina*	PF	s.ix ²⁄₂–*ex*	nu	6344	France
Valenciennes BM 150 fol. 36r	Melisma without text	PF	s.ix ¼	nu	6345	prob. court
Valenciennes BM 170 fol. 199v	Antiphon *Factum est cum una*	PF	s.ix ¼	s.ix ⁴⁄₄-*ex*	6358	St Amand
Valenciennes BM 407 endleaves	Gradual (bifolium)	B	s.ix ²⁄₂		6395	N France
Vatican Ott. lat. 313 fols. 112–14	*Exultet* preface	F (W)	s.ix ²⁄₂	nu	6438	St-Germain-des-Prés
Vatican Pal. lat. 485 fol. 48v	*Exultet* (4 neumes)	F (E)	860–75	nu	6531	Lorsch
Vatican Pal. lat. 862 fols. 68, 69, 71–2, 74–5, 77, 83, 91, 102	Gradual (palimpsested fragment)	N	s.ix/x		6564	Italy
Vatican Reg. lat. 215 fols. 130v–131r	Greek and Latin Credo	F (W)	s.ix ⁴⁄₄	nu	6642	[Tours or Fleury]
Vatican Reg. lat. 267 fol. 228r	Tironian notes with neumes	B	s.vi/vii	s.ix/x	6647a CLA 104	France
Vatican Reg. lat. 267 fol. 228r	*Remisisti* (rep. for Off *Benedixisti*)	F (W)	s.ix/x	s.ix/s.x	6647a CLA 104	France
Vatican Reg. lat. 321 fols. 2r, 4r–v, 5r, 6r, 7r, 9r, 10r, 53v, 54v, 66r	*Versus* (Prudentius)	F (W)	s.ix/x	nu	6662	
Vatican Vat. lat. 3363 fols. VIv, XXVIr	*Versus* (Boethius)	F (W)	s.ix ½	nu	6877	Loire region
Vatican Vat. lat. 5749 fol. 128	Missal (one folio)	F (I)	s.ix/x		6908	N Italy
Vatican Vat. lat. 5775 fol. 156	Missal (one folio)	F (I)	s.ix *med*		6926	Italy
Verona BC LXXXVI (*olim* 81) fol. 15r	Preface	F (I)	s.ix *in*	nu	7062	Verona
Vienna ÖNB 612 fol. 74 (endleaf)	Antiphoner (half folio fragment)	PF	s.ix ¾		7143	Germany
Vienna ÖNB 1815 fols. 19v–20r, 26v, 27v, 28r–v, 34v, 70v–71v, 73r, 74v, 76r, 89r, 92r, 93r, 135r–v	*Pater noster*, Prefaces, Prayers	F (E)	s.ix ¾	nu	7216	Reichenau
Wolfenbüttel, HAB Aug. 8° 56.18 fols. 1v, 10r, 16v	*Versus* (Prudentius)	F (W)	s.ix *med*	nu	7299	Ferrières
Wolfenbüttel HAB Aug. 8° 56.18 fol. 8v	*Versus Pastis uisceribus ciboque*	PF	s.ix *med*	s.ix ²⁄₂	7299	Ferrières
Wolfenbüttel HAB Weiss. 43 fol. 56v	Melisma without text	F (E)	s.viii/ix	nu	7393	Weissenburg
Wolfenbüttel HAB Weiss. 66 fol. 53v	Sequence *Laudes dicamus*	F (E)	s.ix ⁴⁄₄-x	s.ix ⁴⁄₄-s.x	7411–12	Weissenburg
Würzburg UB M.p.th.f 67 fol. 4v	Gospel Reading (7 neumes)	F (E)	s.viii *ex*	nu	CLA 1422	Brittany?
Zurich ZB Rheinau 26 front endleaf	Antiphoner (two folios)	F (E)	s.ix ¾		7606	

nu = neumes undatable

Bibliography

LIBRARIES

BAV   Biblioteca Apostolica Vaticana
BM   Bibliothèque municipale
BSB clm   Munich, Bayerische Staatsbibliothek Handschrift clm
BNF lat.   Paris, Bibliothèque nationale de France manuscrit latin
CSG   Stiftsbibliothek Sankt Gallen Codex
HAB   Wolfenbüttel, Herzog August Bibliothek
ÖNB   Vienna, Österreichische Nationalbibliothek

MANUSCRIPTS (*SIGLA AS USED IN CHAPTER 4*)

A   Autun Bibliothèque municipale S3(4), endleaves
C   *olim* Chartres Bibliothèque municipale 47
G   Graz Universitätsbibliothek 748, front and back pastedowns
La   Laon Bibliothèque municipale 239
L2   Laon Bibliothèque municipale 266
Le   Leipzig Universitätsbibliothek Rep. I 93 (*olim* 169)
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